

NOTES ON PHOTOGRAPHING A LIVE SPECIMEN
OF GAMBEL'S PARTRIDGE.

BY R. W. SHUFELDT.

Plates III-V.

MR. NELSON R. WOOD of the taxidermical department of the U. S. National Museum, owns a beautiful living specimen of Gambel's Partridge (*Callipepla gambeli*). It is a male bird, and at this writing is in full plumage and thoroughly domesticated. He will walk up and down one's arm, feed out of the open hand, and bear stroking without the slightest alarm, or any desire to take flight. Altogether it is one of the best and gentlest little game pets I have ever seen, and has some very interesting traits even in captivity.

Recently the present writer has been engaged upon a paper treating of scientific taxidermy, and in dealing with the game birds, it became necessary to have some good photographs of living Partridges to compare with various examples of mounted ones in the government collections of the National Museum at Washington. Among other birds, Mr. Wood kindly placed this specimen of Gambel's Partridge at my disposition, for the purpose I have named, and it made a most capital subject. Under my supervision the photographs of it which illustrate this article were made by Mr. Smillie of the photographic department of the National Museum.

We first tried to take the bird walking on a table, but after a number of attempts — at least half a dozen — only one really good result was obtained. At last a limb suggested itself to me, and a suitable one was quickly found. On this the bird rested in a number of easy and natural attitudes, but was continually moving withal, and it required absolutely instantaneous exposures to get a result. After about a dozen more attempts several very good ones were secured, and they present us with a variety of instructive points.

In Plate III, a direct left-lateral view of the bird was obtained, at an instant prior to its elevating its plumage for the purpose of



GAMBEL'S PARTRIDGE (*CALLIPEPLA GAMBELI*).

FROM A PHOTOGRAPH OF THE LIVE BIRD.



GAMBEL'S PARTRIDGE (*CALLIPEPLA GAMBELI*).

FROM A PHOTOGRAPH OF THE LIVE BIRD, IN ACT OF PREENING.



COMMON PARTRIDGE (*COLINUS VIRGINIANUS*), FEMALE.

FROM A PHOTOGRAPH OF A MOUNTED SPECIMEN IN U. S. NATIONAL MUSEUM

preening itself, as shown in Plate IV. One of the feathers of its plume has its shaft broken, and it hangs down, otherwise the picture is perfect. It will be seen that the bird is commencing to close its eyes, and they are almost or quite closed during the act of preening, so as to prevent their being irritated by the feathers. Likewise it will be observed that the elevation of the plumage for this act commences on the crown of the head, and then extends down over the shoulders and upper part of the breast. At this juncture, too, it will be noticed that the anterior line of the facial mask and the line of the lower breast are straight, and that they are parallel to each other.

The next stage is an exceedingly interesting one to get a photograph of, and the result in this case was decidedly successful. It instantaneously follows what is shown in Plate III, and the bird has turned its head, and is scratching the skin of its left shoulder with its bill. It slightly elevates itself upon its legs, and raises all the plumage of the body, as well as the secondaries of the wings. The tail is slightly spread, but its upper and lower coverts enter but very partially into the general act of raising the plumage.

Mr. H. C. Denslow, a very able and observing taxidermist, was, at the time I refer, in the department of birds at the National Museum, and he had made many studies of the postures of living Quails and Partridges with the view of using them in his taxidermical work. He had closely watched specimens of our Common Partridge (*Colinus virginianus*) during the times it preened itself and finally attempted to reproduce one of these in a mounted specimen.

His subject presents a female *Colinus* on the ground. She has been preening, and is here shown just the instant before she gives herself a final shake, prior to bringing the now cleaned and dressed plumage down to her body again. Her head is somewhat sunken between her shoulders, and all her body plumage is elevated. But the wing-feathers are but very slightly raised, and the tail-coverts, very properly, not at all so. Mr. Denslow has never seen my photograph here given in Plate IV, and as it is very probable there is not another one like it in existence, we must believe that, guided as he was by the eye alone, he has attained to a very true result as shown in Plate V.

No doubt *Colinus* frequently assumes just the attitude there exhibited.

At different times I have expressed myself in this journal upon the question of the value of photographs of living birds to the ornithologist, to the taxidermist, and to the artist,—so it will obviate the necessity of my repeating those remarks here.

The kind of photographs to which I had reference are very well exemplified in the Plates illustrating the present contribution,—but how rarely do we yet find them! Most of the attempts I have seen published are of little or no use whatever to the scientist in any department, and even the results themselves are far from pleasing. During my recent studies a vast number of these have been submitted to me for my inspection, and, if possible, use. There has not been one result in fifty of any practical value, and I have been obliged to lay them aside. What we are after is to get *absolutely true* pictures of the forms of birds, and such pictures as can be *used*. More examples than I have been enabled to give in this article will shortly appear in my work on ‘Scientific Taxidermy’ in the next ‘Report of the Smithsonian Institution,’ now in press.



TYMPANUCHUS AMERICANUS ATTWATERI
BENDIRE. ATTWATER'S OR SOUTHERN
PRAIRIE HEN.

BY CHARLES E. BENDIRE.

SINCE my preliminary description of this bird in ‘Forest and Stream’ (Vol. XL, No. 20, May 18, 1893, p. 425) I have examined considerable additional material and am now compelled to consider it as only a well marked race of *T. americanus*. Its subspecific characters are as follows:—

Smaller than *T. americanus*, darker in color, more tawny above, usually with more pronounced chestnut on the neck; smaller and more tawny

MEASUREMENTS OF *Tympanuchus americanus attwateri*.

U. S. National Museum Number.	Collector.	Sex and Age.	Locality.	Date.	Wing.	Tail.	Culmen.	Length of bill fr. nostril.	Tarsus.	Middle Toe.	Depth of bill fr. nostril.	Neck Tufts.
4250	G. Würdemann	♂ adult	Calcasieu Pass, La.	1854	8.20	3.50	.70	.50	2.20	1.80	.35	2.25
126347	Southwick and Critchley	♂	Orange Co., Texas	1885	8.30	3.50	.65	.50	2.20	1.85	.40	2.65
128480	H. P. Attwater (Type)	♂	Refugio Co., "	Mar. 27, '93	8.30	3.30	.71	.50	2.00	1.80		2.50
128482	"	♂	"	" 27, '93	8.50	3.15	.67	.50	1.90	1.58		2.90
132508	"	♂	Jefferson "	Jan. 30, '94	8.40	3.67	.65	.52	2.00	1.70	.40	2.50
4249	G. Würdemann	♂	Calcasieu Pass, La.	1854	7.60	3.25	.70	.41	1.90	1.65		
128481	H. P. Attwater	♂	Araucos Co., Texas	Apr. 25, '93	8.15		.80	.50	1.98	1.67		
131177	"	♂	"	Nov. 7, '93	8.00	3.25	.72	.50	2.00	1.72		
131178	"	♂	"	" 7, '93	8.00		.72	.52	1.90	1.62		
132509	"	♂	Jefferson "	Jan. 30, '94	7.65	3.15	.71	.45	1.95	1.75	.37	2.56
Average		♂			8.34	3.42	.68	.50	2.02	1.75	.38	
"		♀			7.88	3.22	.73	.48	1.95	1.68	.37	

light colored spots on wing-coverts, and much more scantily feathered tarsus, the latter never feathered down to base of toes, even in front; a broad posterior strip of bare skin being always exposed, even in winter, while in summer much the greater part of the tarsus is naked.

Downy Young.— Head, neck and back, tawny rufous; top of head, back and rump, marked with a greater or less number of brownish black spots; sides and lower parts rich golden buff. The young chicks even show the great difference in the feathering of the tarsi, only the front half being covered, while in *T. americanus* of the same age only a narrow strip of the posterior side is unfeathered. In the latter the feathering in front comes almost if not quite to the base of the toes, while in the former, there is a naked space of more than .10 of an inch.

The subjoined measurements have been kindly taken for me by Mr. R. Ridgway of the Smithsonian Institution.

Habitat.— Coast districts of southwestern Louisiana and southern Texas.

While engaged in working out the geographical ranges of *T. americanus* and *T. pallidicinctus* I received information from Army friends and others stating that Prairie Hens were found along the Gulf coast of Texas, and in order to determine positively which species occurred there, I wrote to a number of parties asking them to procure specimens for me. All the material received was kindly procured by Mr. H. P. Attwater of Rockport, Aransas Co., Texas, and generously donated by him to the U. S. National Museum Collection, and as a slight recognition for his trouble in obtaining these specimens, which proved to be a well marked race, I have named this new subspecies in his honor. The U. S. National Museum already contained three skins which are clearly referable to this subspecies, but the material was not sufficient and in too poor condition to base a new race on.

Attwater's Prairie Hen is considerably smaller than its northern relative, full grown birds averaging only from 25 to 31 ounces. They frequent the low prairie lands near the coast and do not appear to be very common anywhere. They begin nesting about the middle of March, and young chicks, probably three or four days old, were obtained by Mr. Attwater, on April 25, 1893, near the line between Aransas and Refugio Counties, Texas. The crops of three of the specimens sent by Mr. Attwater contained remains of insects and the tops and seeds of different species of leguminous plants.

SUMMER BIRDS OF THE PINE BARRENS OF
NEW JERSEY.

BY WITMER STONE.

THE Pine Barrens of New Jersey have long been renowned as a botanical collecting ground, and the botanists of Philadelphia and vicinity take many excursions every year into this region, which is so easy of access and which presents a flora so absolutely different from that of eastern Pennsylvania that nearly every species is a 'rarity' to one familiar only with the plants of the latter section.

Although the birds of the Pine Barren region are quite as interesting as its flora, ornithologists have been slow to penetrate its deep swamps and to explore its sandy wastes, and slower still to make known the results of their explorations.

It seems strange that Wilson and Audubon should not have visited this region, but so far as we can judge they only explored one or two points near the coast, and did not then make a very thorough investigation, or they would certainly have had something to say of the abundance of such species as the Parula, Hooded and Prairie Warblers and the Tree Swallow, which are almost unknown in summer in eastern Pennsylvania. Even Cassin and Turnbull seem to have been unfamiliar with the fauna of the Pine Barrens, to judge from the few scattered statements regarding some of the above species which they have made.

The Pine Barrens occupy the whole of southern New Jersey south of a line from Long Branch to Salem, excepting the maritime marshes and a narrow strip bordering the Delaware River. They consist of a low, flat stretch of sandy ground, some parts forming dreary wastes of loose sand, with a scattering growth of scrub pines and oaks (*Quercus nigra* and *Q. ilicifolia*), and in others covered with continuous pine woods of the taller pitch pine (*Pinus rigida*). Scattered throughout the region, especially along the sluggish streams, are almost impenetrable swamps of white cedar (*Chamæcyparis thyoides*) bordered by thickets of holly and various ericaceous bushes, and numerous open sphagnum and cranberry bogs.

Portions of this region, especially in Atlantic County, are still quite wild and comparatively uninhabited. Deer (*Cariacus virginianus*) are shot here every winter, and along the upper Egg Harbor River a few bears (*Ursus americanus*) in all probability still exist.

The Pine Barrens lie entirely within the Carolinian Fauna and are, generally speaking, much richer in southern types than the southeastern portion of Pennsylvania. Many species of insects and plants are found there which do not occur farther north in the State, nor to the west of the Delaware River. A number of Carolinian birds also occur abundantly, but some other species quite as characteristic of this fauna, and which are found regularly in southeastern Pennsylvania, are conspicuous by their absence. This is undoubtedly due to the peculiar environment, which is not suited to their habits.

The occurrence of such a boreal type of mammal as the Red-backed Mouse (*Evotomys*) in the Pine Barrens is probably accounted for by the fact that it here inhabits the cool sphagnum bogs and is chiefly nocturnal, so that the environment during the time of its activity would be quite congenial.

No northern species of birds have yet been found breeding in the Pine Barrens, unless the Redstart be so considered, for although it occurs sparingly in other parts of the Carolinian belt, it is much more characteristic of the Alleghanian fauna.

Of the birds which characterize the dry scrub barrens the Towhee, Ovenbird and Prairie Warbler are the most conspicuous. The latter species is especially numerous, and its song is heard continually as it flits about among the low pines and scrub oaks. Wherever the tall pines occur the Pine Warbler abounds, frequenting the topmost branches, among the bunches of cones or clinging to the trunk in the manner of a Creeper. In the thickets bordering the cedar swamps are heard the notes of the Carolina Chickadee and White-eyed Vireo, but the most interesting bird of these localities is the Parula Warbler. Everywhere throughout the swamps the bushes are covered with great masses and festoons of the delicate gray lichen or 'beard-moss' (*Usnea barbata*), and where this grows thickest the Parulas abound. They nest exclusively in the bunches of lichens; selecting some convenient bunch they loop and weave together the

hanging portions so as to form a receptacle for their eggs. Sometimes the nest occupies the very center of a large mass of the lichen, and so little do these bunches of lichen differ from those which have not been made to do service as nests that it is often quite impossible to distinguish between them. In the swamps bordering the small lakes near Dennisville, Cape May County, these little Warblers are especially abundant.

In Atlantic County, above May's Landing, the damming of the Egg Harbor River, which was accomplished many years ago, has resulted in the flooding of several large cedar swamps through which the river formerly flowed, so that now the surface of the stream, nearly a quarter of a mile in width, is covered with the bare and bleached trunks of the cedars and other trees, which appear like a dense forest of telegraph poles.

These rotten trunks have not been overlooked by the birds, and several species here find congenial nesting sites; but although they would seem to be safer from molestation here than on the land, one would think that it must fare badly with the young in their first attempts at flying. The Flickers were probably the first settlers, so to speak, of this aquatic colony, and they still nest in the larger trunks, the bottoms of their nests being in many cases but a few inches above the surface of the water.

In the old Flickers' nests, or inside the fragile bark shells of the stumps most advanced in decay, the Carolina Chickadees and Tree Swallows form their nests. In addition to these birds a few Kingbirds and Robins occupy the stumps of such trees as were formerly used by the Flickers, and which have broken off so as to leave the bottoms of the old excavations as convenient receptacles for the structures of the succeeding tenants.

A list of the species known to summer in the Pine Barrens follows. This is based mainly upon my own experience, but I am also indebted for many interesting notes to various members of the Delaware Valley Ornithological Club, especially to Messrs. S. N. Rhoads, J. H. Reed, C. A. Voelker, M. L. C. Wilde, and I. N. DeHaven.

1. *Aix sponsa*. WOOD DUCK.—Frequent along the Egg Harbor and other rivers.

2. *Ardea herodias*. GREAT BLUE HERON.—Seen throughout the year, and doubtless some heronries are to be found in the dense cedar swamps, although I have never seen any nests.

3. *Ardea virescens*. GREEN HERON.—Abundant.
4. *Nycticorax nycticorax nævius*. NIGHT HERON.—Frequent, though I have never seen any heronries in the Barrens.
5. *Rallus elegans*. KING RAIL.—A nest of this species was found July 15, 1892, by Dr. J. B. Brinton, in a cedar swamp near Repaupo, which lies on the outskirts of the district. The species may also breed farther inland.
6. *Philohela minor*. WOODCOCK.—Tolerably common.
7. *Actitis macularia*. SPOTTED SANDPIPER.—Tolerably common.
8. *Colinus virginianus*. BOB-WHITE.—Common, especially in Cape May County. The present birds are largely from introduced stock.
9. *Bonasa umbellus*. RUFFED GROUSE.—Tolerably common in the wilder parts of Atlantic County.
10. *Zenaidura macroura*. MOURNING DOVE.—Tolerably common.
11. *Cathartes aura*. TURKEY VULTURE.—Common throughout the Pine Barrens, and is to be seen during the entire year, though less common in winter.
12. *Circus hudsonius*. MARSH HAWK.—Not very common, but may breed occasionally, as a nest was taken on Long Beach by Mr. W. E. D. Scott (Bull. Nutt. Orn. Club, 1879, p. 222).
13. *Accipiter velox*. SHARP-SHINNED HAWK.—Rather common.
14. *Accipiter cooperi*. COOPER'S HAWK.—Tolerably common.
15. *Buteo borealis*. RED-TAILED HAWK.—Tolerably common.
16. *Buteo latissimus*. BROAD-WINGED HAWK.—Tolerably common. I have no actual record of the breeding of these four Hawks in the Pine Barren district, but individuals are seen during the summer and they doubtless all nest in the pine forests.
17. *Haliaeetus leucocephalus*. BALD EAGLE.—A few pairs are seen all the year along the coast and doubtless breed in the cedar swamps. A pair was observed daily near Dennisville, Cape May County, in May, 1891, and was reported to have a nest in the vicinity.
18. *Falco sparverius*. SPARROW HAWK.—Common.
19. *Pandion haliaëtus carolinensis*. OSPREY.—Common, breeding along the edge of the Pine Barrens towards the salt marshes.
20. *Asio accipitrinus*. SHORT-EARED OWL.—Rare. Breeds on the marshes at Long Beach (Scott, Bull. Nutt. Orn. Club, 1879, p. 202), and perhaps in the Pine Barren swamps.
21. *Megascops asio*. SCREECH OWL.—Common.
22. *Bubo virginianus*. GREAT-HORNED OWL.—Not common but pretty generally distributed through the pine woods.
23. *Coccyzus americanus*. YELLOW-BILLED CUCKOO.—Not common.
24. *Ceryle alcyon*. KINGFISHER.—Along the larger streams and small lakes.
25. *Dryobates villosus*. HAIRY WOODPECKER. Common.

26. *Dryobates pubescens*.¹ DOWNY WOODPECKER. This species and the preceding occur in about equal numbers.

27. *Ceophlœus pileatus*. PILEATED WOODPECKER.—Two specimens of this bird were secured by Dr. W. L. Abbott in Cape May County (No. 26675, Nov. 7, 1878, and No. 26676, Dec. 31, 1879, Coll. Acad. Nat. Sci. Phila.). Although both were secured in winter, the species is generally resident where found, and the birds may have bred in the Barrens. None have been taken since, so far as I am aware.

28. *Colaptes auratus*. FLICKER.—Abundant.

29. *Anrostomus vociferus*. WHIP-POOR-WILL.—Common in the dense swamps of Cape May County, and probably in other parts of the Pine Barren region, emerging at dusk into the open ground, especially about old deserted farms.

30. *Chordeiles virginianus*. NIGHT HAWK.—Common in dry, sandy situations, but rather local in its distribution.

31. *Chætura pelagica*. CHIMNEY SWIFT.—Abundant, mainly in the vicinity of dwellings.

32. *Trochilus colubris*. HUMMINGBIRD.—Very common in Cape May County, much more so than in eastern Pennsylvania.

33. *Tyrannus tyrannus*. KINGBIRD.—Very common throughout the open scrub barrens.

34. *Myiarchus crinitus*. CRESTED FLYCATCHER.—Common along the edges of the cedar swamps.

35. *Sayornis phœbe*. PHŒBE.—Tolerably common.

36. *Contopus virens*. WOOD PEWEE.—Common in the cedar swamps.

37. *Empidonax acadicus*. ACADIAN FLYCATCHER.—Messrs. J. H. Reed and M. L. C. Wilde took nests of this species in Cape May and Cumberland Counties in 1893, but it is not a commonly distributed species in the region.

38. *Cyanocitta cristata*. BLUE JAY.—Common.

39. *Corvus corax principalis*. RAVEN.—Several pairs of Ravens at least still breed in the cedar swamps of southern New Jersey. All the year the birds visit the sea coast from Atlantic City to Cape May and are frequently observed. One pair has bred for a number of years near Tuckerton as I have been informed by Mr. G. B. Benners, and Mr. S. N. Rhoads has heard the same thing from the Jillson Bros. of Tuckerton who have visited nests in this vicinity. Another pair of Ravens was observed daily by Mr. S. N. Rhoads and myself near May's Landing during February, 1893, and we were informed that they nested every year in a cedar swamp just above that locality. As the relationship of the Ravens

¹ Audubon gives *Dryobates borealis* as occurring in New Jersey, and Mr. Ridgway includes this State in the range of the species without any further evidence. We have been unable, however, to find any records of the capture of this species anywhere in either Pennsylvania or New Jersey, except one specimen supposed to have been taken near New York City (Lawrence, Ann. Lyceum Nat. Hist., VIII, p. 291).

of the eastern United States is a question of general interest I have given the measurements of two New Jersey specimens in the collection of the Philadelphia Academy as well as those of typical examples of *C. c. principalis* and *C. c. sinuatus* from the same collection. On the whole I think the New Jersey birds come nearer to the former race, as does also a specimen from Ft. Riley, Kansas, which is included in the list below.

Corvus corax principalis.

		Culmen to extr. Base.	Depth of Bill through Nostril.	Wing.	Tarsus.
30143	McCormick Bay, Greenland.	3.08 in.	1.10	17.75	2.45
30195	" " "	2.67	1.07	17.50	2.38
3295	New Jersey.	2.62	1.05	17.10	2.50
3314	" "	2.90	1.09	17.25	2.50
2817	Ft. Riley, Kansas.	2.88	1.08	18.10	2.52

Corvus corax sinuatus.

2815	California.	2.45	1.00	17.00	2.50
2820	"	2.50	.92	15.50	2.32
27620	Oracle, Arizona.	2.60	1.00	16.25	2.33

40. *Corvus americanus*. CROW.—Common.

41. *Corvus ossifragus*. FISH CROW.—While this species occasionally visits the Pine Barrens and may possibly breed on its borders it is generally confined to the immediate vicinity of the sea coast, nesting in the isolated clumps of pines which occur here and there on sandy 'islets' in the salt meadows.

42. *Molothrus ater*. COWBIRD.—Not common. Have taken its egg in one instance in the delicate nest of the Parula Warbler, but how it was deposited is somewhat of a mystery, as the opening seemed entirely too small to admit the intruder.

43. *Agelaius phœniceus*. RED-WINGED BLACKBIRD.—Very common along the Egg Harbor River and other large streams as well as on the partly brackish swamps bordering the eastern side of the Pine Barrens.

44. *Sturnella magna*. MEADOW LARK.—Rare, and confined to the open cultivated districts and to the salt meadows to the east.

45. *Icterus spurius*.¹ ORCHARD ORIOLE.—Tolerably common.

46. *Quiscalus quiscula*. PURPLE GRACKLE.—Not common except in the vicinity of towns.

¹ The Baltimore Oriole seems to be quite rare in this region, and I do not recollect ever seeing one in summer.

47. *Spinus tristis*. GOLDFINCH.—Tolerably common.
48. *Poocætes gramineus*. VESPER SPARROW.—Common in open cultivated ground.
49. *Ammodramus savannarum passerinus*. YELLOW-WINGED SPARROW.—Occasional in open ground.
50. *Ammodramus henslowi*. HENSLOW'S SPARROW.—This species was taken August 16, 1886, by my friend Mr. A. P. Brown near Point Pleasant, N. J., in a swamp bordering the Pine Barrens, and was evidently breeding there. Others were seen in the same place in subsequent years.
51. *Ammodramus caudacutus*. SHARP-TAILED SPARROW.
52. *Ammodramus maritimus*. SEA-SIDE SPARROW.—These two salt marsh species follow the borders of some of the rivers and streams within the edge of the Pine Barrens but do not occur in the region proper.
53. *Spizella socialis*. CHIPPING SPARROW.—Common, mostly about dwellings.
54. *Spizella pusilla*. FIELD SPARROW.—Common throughout the low scrub barrens.
55. *Melospiza fasciata*. SONG SPARROW.—Abundant.
56. *Pipilo erythrophthalmus*. CHIEWINK.—Very common throughout the scrub barrens and on the edges of the swamps.
57. *Cardinalis cardinalis*. CARDINAL.—Not very common.
58. *Passerina cyanea*. INDIGO BIRD.—Not common.
59. *Progne subis*. PURPLE MARTIN.—Common, mainly along the large streams, nesting about buildings and in boxes.
60. *Petrochelidon lunifrons*. CLIFF SWALLOW.—Messrs. Reed and Wilde secured some nests of this species in Cape May County, but it is not generally distributed.
61. *Chelidon erythrogaster*. BARN SWALLOW.—Very common.
62. *Tachycineta bicolor*. TREE SWALLOW.—Abundant throughout the Pine Barrens, especially along the large streams.
63. *Stelgidopteryx serripennis*. ROUGH-WINGED SWALLOW.—Rather common in localities suited to its habits. Although the Bank Swallow may breed in the region, all the colonies which I have examined proved to be of this species.
64. *Ampelis cedrorum*. CEDAR BIRD.—Not very common during the breeding season, but some undoubtedly remain.
65. *Lanius ludovicianus*. LOGGERHEAD SHRIKE.—I have observed a few of these birds every summer for several years in the vicinity of Cape May and have no doubt that they breed there.
66. *Vireo olivaceus*. RED-EYED VIREO.—Common.
67. *Vireo noveboracensis*. WHITE-EYED VIREO.—Very common in the swamps where it is one of the most characteristic species.
68. *Mniotilta varia*. BLACK-AND-WHITE WARBLER.—Common throughout the Pine Barrens.
69. *Compsothlypis americana*. PARULA WARBLER.—Very common in swampy locations wherever the *Usnea* is to be found.

70. *Dendroica æstiva*. YELLOW WARBLER.—Rather common in many localities, mostly along the large streams.

71. *Dendroica vigorsii*. PINE WARBLER.—Very common wherever the taller pines are to be found.

72. *Dendroica discolor*. PRAIRIE WARBLER.—Very common throughout the low scrub barrens.

73. *Seiurus auropigillus*. OVEN-BIRD.—Common.

74. *Geothlypis trichas*. MARYLAND YELLOW-THROAT.—Very common.

75. *Icteria virens*. YELLOW-BREASTED CHAT.—Not common.

76. *Sylvania mitrata*. HOODED WARBLER.—In all the dark cedar swamps this species is to be found, and its note is one of the most familiar sounds. In Cape May County it is especially abundant.

77. *Setophaga ruticilla*. REDSTART.—Messrs. Reed and Wilde secured nests of this species in Cape May County, but it is not generally distributed.

78. *Mimus polyglottos*. MOCKINGBIRD.—I secured a specimen of this bird at Cape May Point, August 27, 1891, which was still in the worn breeding plumage, so that it seems probable that it nested in the vicinity. The species is reported to still breed near Tuckerton occasionally, but I have been unable to get any definite information on the subject. It is certainly very rare in New Jersey.

79. *Galeoscoptes carolinensis*. CATBIRD.—Common.

80. *Harporhynchus rufus*. BROWN THRASHER.—Common.

81. *Thryothorus ludovicianus*. CAROLINA WREN.—Rather common.

82. *Troglodytes ædon*. HOUSE WREN.—Not very common; only seen about houses.

83. *Cistothorus palustris*. LONG-BILLED MARSH WREN.—This species, which is mostly restricted to tide water swamps, follows the course of the larger streams for some distance back into the Pine Barrens, and I have found it breeding a mile above May's Landing in a swamp which borders the dam on the Egg Harbor River at this point.

84. *Sitta carolinensis*. WHITE-BELLIED NUTHATCH. — Tolerably common.

85. *Parus bicolor*. TUFTED TITMOUSE.—Not very common.

86. *Parus carolinensis*. CAROLINA CHICKADEE. — Very common throughout the Pine Barrens.

87. *Poliophtila cærulea*. BLUE-GRAY GNATCATCHER.—Mr. W. L. Bailly has taken the nest of this species at Bridgeton, and Messrs. I. N. DeHaven and C. A. Voelker have obtained specimens respectively at Atlantic City and Dennisville during spring. It is, however, of decidedly rare occurrence.

88. *Turdus mustelinus*. WOOD THRUSH.—Not common, and confined to the dense cedar swamps.

89. *Merula migratoria*. ROBIN.—Common.

90. *Sialia sialis*. BLUEBIRD.—Tolerably common.

THE TONGUE OF THE CAPE MAY WARBLER.

BY FREDERIC A. LUCAS.

IN SEEKING to unravel the tangled skein of passerine birds, and to straighten out its intermingled loops, the taxonomist has sought to avail himself of every possible character, and, from the development of the embryo to the markings on the egg shell, little has been left untried.

While the character of the tongue has not been overlooked, comparatively little use has been made of it, partly on account of the time and trouble required for the careful study of this organ, and partly perhaps from a doubt as to its value. In his 'Review of North American Birds' Prof. Baird, in treating of the family Sylviolidæ, compared the tongues of several species of this group with those of several species of Cœrebidæ, drawing particular attention to the tongue of *Dendroica tigrina* and, mainly on this character, basing the genus *Perissoglossa*.

Quite recently Dr. Gadow, in his paper on the 'Structure of Certain Hawaiian Birds,' has laid considerable stress upon the shape and structure of the tongue, using it as the principal character of one of his alternative keys to the arrangement of the families of birds therein discussed. Both Prof. Baird and Dr. Gadow have dwelt to some extent on the tongue of the Cœrebidæ, the one using it to unite these birds with the Sylviolidæ, the other to ally them with the Drepanididæ.

In this connection arise the questions: What is the exact taxonomic value of the tongue? and how constant is its pattern in any given group? To these I would add another query: To what extent is the food of a bird indicated by the shape of the tongue?

It is much easier to ask these questions than to answer them, and I am very far from being ready with a reply; still, having had occasion to recently examine the tongues of a number of birds, I am at least partly prepared with a response as to my own ideas on the subject. It would seem that the soft parts of birds would naturally be more plastic than the hard, and that while the bone yields more or less to the pull of the muscle and

is changed by internal and external conditions, that such organs as the tongue and viscera would be more easily influenced, especially by any change, either from choice or necessity, in the character of a bird's food. If this be so, we should find differences between these parts in nearly related birds, while at the same time it should not surprise us to discover resemblances between them among forms separated by space, or skeletal structure, but whose food habits are similar.

Careba cærulea and *C. cyanea* are certainly near relatives, and their skulls are so much alike that I doubt my ability to tell them apart, but their tongues, although the same in structure, differ so decidedly that they may be distinguished from one another at a glance. Unfortunately, for lack of material, I can carry the subject no farther and am unable to say whether or not the tongue of *cærulea* is typical of the plainer colored species. Now about as far from America as one can readily get, in New South Wales, we find that one of the Honey-suckers (*Acanthorhynchus tenuirostris*) has a tongue structurally like that of *Careba*, but elaborated and refined to a greater degree, being more slender, more tubular, and more finely feathered. Judged by cranial characters the two birds are widely separated, for, as Dr. Parker has pointed out, the palate of *Acanthorhynchus* has a feature in the relations of the premaxillaries and palatines found in the Ostrich but exceptional higher up the scale. Coming back to America, to the genus *Dendroica*, we will find that while the tongues of various species are constructed on the same plan, that there is great specific variation in the execution of details, the extremes, so far as I have examined, being marked by *Dendroica maculosa* and *D. tigrina*, and that while these extremes are widely separated, yet the gap between them is bridged over by other species which show intermediate stages. The Tanagers, too, show considerable diversity in their tongues, some being thick and fleshy, others thin and horny, while there is much less uniformity of plan in these birds than in the Warblers. While these facts are entirely too few to form the basis of a reply to the question, What is the value and constancy of pattern of the tongue? they seem at least to hint that while there may be a certain general structural plan in a given group of birds, that this plan is subject to great specific varia-

tions in its details, and cannot be too surely relied on, since it is liable to be copied by outsiders.

Next as to the relationship between food and tongue. The Sandwich Islands Drepanididæ have a most perfect tubular tongue, such as one might make on a gigantic scale by curling up the edges of a long slip of paper until they meet, and then tying them firmly in place. These birds (some of them at least) have, like the Meliphagidæ, a suctorial apparatus, so that if they do not feed on nectar it is not for lack of ability to do so. And yet some of these birds, as their stomachs testify, feed on fruit and some on spiders and insects. *Certhiola* has a brushy, twisted tongue, such as we find in some of the Meliphagidæ, but while these last are said to be honey-suckers *par excellence*, *Certhiola* seems to have a decided liking for insects.

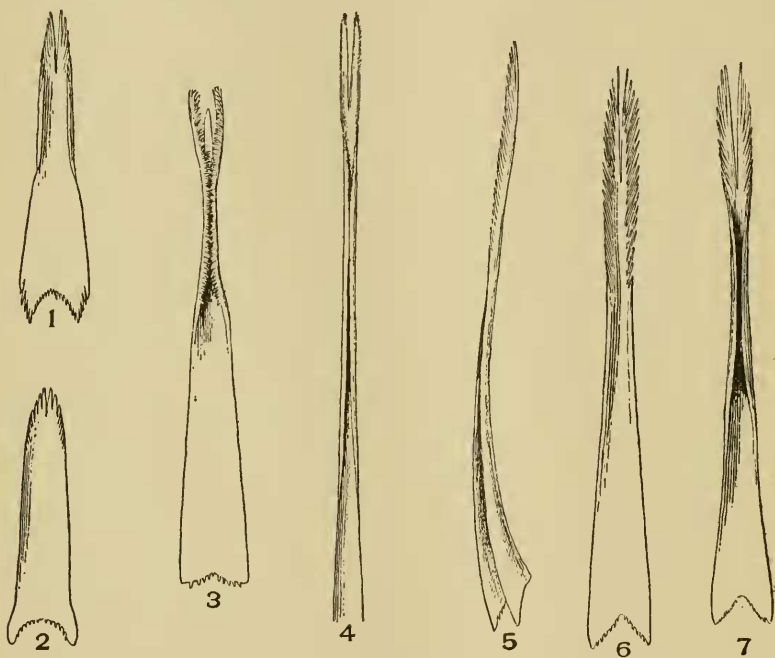
In the genus *Cæreba* (or *Abelorrhina*) as well as in *Glossoptila*, the tongue seems admirably fashioned for catching insects or sucking honey, and these birds feed on berries. So with the Hummingbirds, which have a good suctorial tongue and yet feed principally on insects, although they may perhaps have honey for dessert.

Just here I wish to forestall a possible criticism. It is quite likely that in the cases just mentioned the birds may feed at some seasons on fruit, and at others on insects, but the point I would make is that even if they do, the tongue is no certain guide to the nature of the birds' food.¹

Coming finally to *Dendroica tigrina*, whose tongue has been used as a peg on which to hang this paper, if any one will take the trouble to compare the figure accompanying this paper—which was made from a specimen collected by my friend Mr. William Palmer—with figure 5, page 163, 'Review of North American Birds,' he will find that they do not agree with one another. If comparison is made with figure 4 of the same work, it will be seen that, making allowance for the personal equation of the two draughtsmen, the figures agree very well. If the tongues of *Cæreba* herein figured (Fig. 5-7) be compared

¹ Mr. F. M. Chapman (Bull. Am. Mus. Nat. Hist. VI, p. 26) says that in Trinidad *Abelorrhina cærulea* and *A. cyanea* feed on the blossoms of the *bois immortel*, but he does not say that he examined the stomachs of any birds. Query: Were the birds after nectar or insects?

with 3 and 5 (same work) their structural resemblance will be evident, and the conclusion is unavoidable that, as at Babel, there has been a confusion of tongues, and that the principal character of the genus *Perissoglossa* has originated in a mistake. Granting, however, that the tongue had been as figured, it hardly seems that the characters would have been sufficiently solid to form the foundation for a genus.



ENLARGED FIGURES OF TONGUES OF BIRDS: 1. *Dendroica tigrina*; 2. *D. maculosa*; 3. *Glossoptila campestris*; 4. *Acanthorhynchus tenuirostris*; 5 and 6. *Certhia cyanea*; 7. *C. caerulea*.

It may be said further that the tongue of *Certhiola* is also wrongly figured in the 'Review of North American Birds,' for it is not fimbriated, but brushy and twisted. Unfortunately such errors are bound to occur, and we must ever be on the watch for them; and I will only say in conclusion that if any one thinks them inexcusable, let him try to dissect and figure a dozen similar specimens and the crime will perhaps seem to have some extenuating circumstances.

ON GEOGRAPHICAL VARIATION IN *SIALIA MEXICANA* SWAINSON.

BY ROBERT RIDGWAY.

IN October, 1889, Mr. A. W. Anthony, of San Diego, California, described, in the 'Proceedings' of the California Academy of Sciences (2d Ser., Vol. II, p. 79), under the name *Sialia mexicana anabelæ*, a supposed new race of *Sialia mexicana*, resident on the San Pedro Martir Mountains, Lower California. A small number of specimens were sent to me by Mr. Anthony for examination, and upon this insufficient evidence an unfavorable opinion was formed as to the validity of the form. It was accordingly considered by the A. O. U. Committee on Publications ineligible for admission to the Check List on the ground that its characters were "deemed not sufficiently constant." (See 'The Auk,' Jan. 1890, p. 66.)

Not satisfied with the disposition made of it by the A. O. U. Committee, Mr. Anthony again visited the San Pedro Mountains and collected a large number of specimens, which he forwarded to me, early in November, 1893, for examination by the Committee; but the question of its status not having been raised during the year no action could properly be taken concerning it. It is for the purpose, therefore, of having this question available for consideration by the Committee at its next session that this paper has been prepared; for I am now convinced that an error was committed in rejecting the new subspecies which Mr. Anthony had described.

In order to clearly understand the nature and value of the characters presented in the resident birds of this species from Lower California, it has been found necessary to bring together for comparison as many specimens of the species, from all parts of its range, as possible. No difficulty has been experienced in getting a pretty good series of the common form of the western United States (*S. mexicana occidentalis*) and, thanks to Mr. Anthony, of the resident race of the Lower California mountains (*S. m. anabelæ*); but of the bird resident in southern Mexico (true *S. mexicana*), very few specimens — only 10 — could be

obtained, and for 9 of these I am indebted to Dr. C. Hart Merriam, Chief of the Division of Economic Ornithology, Department of Agriculture, the National Museum collection containing a single specimen only. Although so small, numerically, this series is highly important, as showing that the resident birds of southern Mexico alone are entitled, unqualifiedly, to the name *Sialia mexicana*, a fact which would not have been evident without them.¹

The number of specimens examined in connection with this paper and the sources from whence obtained are shown in the following tables:—

	♂	♀	Total.
I. <i>Sialia mexicana</i> Sw.	6	4	10
II. <i>S. m. occidentalis</i> (Towns.).	82	23	105
III. <i>S. m. anabelæ</i> Anthony.	44	18	62
Total,	132	45	177

	I.	II.	III.	Total.
A. W. Anthony.	—	32	60	92
National Museum.	1	67	2	70
Division of Ornithology.	9	—	—	9
H. W. Henshaw.	—	6	—	6
Total,	10	105	62	177

The conclusions reached after very careful examination and comparison of the large number of specimens examined may be summarized as follows:—

(1) Although the *Sialia mexicana* of Swainson was plainly based on a specimen (from the “tableland of Mexico”) having the back entirely blue, the series of specimens from southern Mexico, though small, is sufficient to show that such is by no means a constant—probably not even usual—character of the Mexican form. But these southern resident birds, besides averaging considerably larger than any others, are of a much deeper or darker, more purplish, blue color, and the females, at least,

¹ The northern and southern forms were, however, duly separated in 1881 by Mr. Henry Seebohm, in Volume V of the ‘Catalogue of Birds in the British Museum’ (pp. 331–333), though one of the supposed differential characters proves to be altogether unreliable.

have a far greater amount of cinnamon or rusty coloring on the under parts.

(2) A series of nearly 50 adult males collected during the breeding season on the higher parts of the San Pedro Martir Mountains, Lower California, present as practically constant characteristics several features which, individually, are very rarely and in combination with one another never, seen in a still larger series (82 adult males) collected in various portions of the western United States and in Mexico. These peculiarities of the Lower Californian bird consist in (1) the entire absence or scarcely obvious development of chestnut on the back, (2) separation of the chestnut on the breast into two lateral patches by the longitudinal extension of the blue of the throat to that of the belly, (3) greater average size, especially of the bill, and (4) appreciably deeper, richer blue color of the upper parts, with the blue of the throat—often that of the breast and upper belly also—nearly or quite as intense as that of the upper parts.

(3) The extensive series from the western United States, representing numerous localities from southern California to Washington on the Pacific coast and western Texas to Colorado in the interior, as well as from the northern and western States of Mexico, show great variations in plumage which are of a decided geographical significance¹ and may require subdivision of the series into two forms. The birds of this series are almost invariably smaller than those of the two preceding groups. They have, with few exceptions, the back more or less extensively chestnut, and the chestnut of the breast is almost invariably broadly continuous anteriorly. In 31 specimens from Colorado, New Mexico, Arizona, northern Mexico and western Texas all but 2 (both autumnal birds from New Mexico) have the back and scapulars 'solid' chestnut, at least laterally and, broadly,

¹ Professor Baird first called attention to these variations in 'Birds of North America' (1858), p. 223, as follows:—

"The reddish brown of the back and breast is in the form of lateral patches, meeting more or less narrowly on the central line. Sometimes in the middle of the back it does not meet at all, and at others it is quite broadly continuous. The latter is most frequently seen in Rocky Mountain specimens. . . . Specimens from California occasionally have but little brown on the back, but it is almost always distinctly visible."

across the anterior portion. Among 34 specimens from Washington, Oregon, California, and the western edge of Nevada only 6 are of this character, the remainder having the chestnut of the back separated into two lateral patches, barely coalescing for a slight extent in a few specimens only, and often reduced to two widely separated and greatly restricted areas. The six exceptions are 1 from Fort Tejon (August 7), 1 from Walker's Basin (November 5), 2 from Berryessa (November 14 and December 8), 3 from Santa Isabel, San Diego Co. (December 29 and February 15), 1 from Murphy's, Calaveras Co. (winter), and 1 from San Francisco. The latter is without date, but is in spring or summer plumage; and being obtained from a dealer's stock may well be ignored. The others are all fall or winter specimens,¹ and, except that from Murphy's, from southern California, may have been migrants from the eastward.

The type of *Sialia occidentalis* Townsend is a bird of the western style, with perhaps a little more than the average amount of chestnut on the back. Whether the type of *S. caruleocollis* Vigors was also a representative of this style probably cannot now be determined, neither the description² nor colored figure being sufficiently accurate to permit positive identification, while nothing whatever is said as to its locality.

While hesitating to formally separate the Rocky Mountain bird I believe it will yet be found necessary to do so; and in view of this probability would suggest for it the name *Sialia mexicana bairdi*,³ in respectful memory of Professor Baird, as well as a proper recognition of his discovery of the geographical variations referred to.⁴

¹ The one from Fort Tejon, although taken in August, had nearly completed the fall moult.

² See foot-note on page 155.

³ Type, No. 7637, U. S. National Museum, Camp 110, New Mexico, Jan. 31, 1854; Kennerly & Möllhausen.

⁴ Since the above was written I find on reference to some memoranda which I made concerning specimens not now available for examination, that among specimens previously examined were the following having the back wholly chestnut: Beaverton, Oregon, 2; Wilson's Peak and Alhambra, southern California, 3. On the other hand, among those with the back only partly chestnut were the following: Beaverton, Oregon, 13; Wilson's Peak and San Diego, California, 1 each; Granite Gap, New Mexico, 1.

The amount of chestnut on the back is usually more or less correlated with a similar variation of that on the breast; but not always so. Of the specimens now at hand of *S. m. occidentalis* in its larger sense (that is, including both the typical form and the chestnut-backed style which I have named, provisionally, *S. m. bairdi*), only 6 out of a total of 65 have the chestnut of the breast nearly or quite divided into two lateral patches, these all of the western style, the localities represented being as follows: Ft. Steilacoom, Washington, 1 (April 17); Mt. Lassen, California, 1 (July 4); Nicasio, California, 1 (April 11); Mt. Whitney, California, 1 (October 23); Carson City, Nevada, 1 (February 21); and Genoa, Nevada, 1 (June 20). These all have very little chestnut on the back, amounting in the Genoa specimen to a mere trace, observable only on the closest inspection.¹

The chestnut on the breast is as a rule decidedly broader in the birds with wholly brown backs, but occasionally an example with very little chestnut on the back will be found with the maximum width of that color across the breast. There is so much individual variation in the intensity of this color that it is difficult to tell whether in one form it averages deeper than in the other; but apparently it averages paler in the coast form.

From the foregoing it will be seen that while the presence or absence of chestnut on the back and the degree to which it is developed is largely a variable individual character and only

Dr. A. K. Fisher has examined a series of 10 adult males in the collection of the Division of Ornithology, U. S. Department of Agriculture, with the view of testing this character, and kindly submits the following result:—

Back with more or less blue: Pyramid Lake, Nevada, 2 (June 24); Prescott, Arizona, 1 (June 21).

Back entirely chestnut: Fort Davis, Texas, 1 (Jan. 2); Kanab, Utah, 1 (Dec. 26); San Francisco Mts., Arizona, 1 (August); Charleston Mts., Nevada, 1 (February); Mt. Whitney, California, 1 (Sept. 4); San Bernardino, California, 2 (Dec. 30).

It will thus be seen that this material, in the main, bears out the geographical significance of the variation in question, though the two examples with wholly chestnut backs from Beaverton, Oregon (which is on the west side of the mountains and near the Columbia River), in addition to other exceptions to the rule, show clearly that the variation is not strictly geographical.

¹ These six examples bear a very close resemblance to *S. m. anabelæ*, but may be separated by their decidedly more slender bill, and, except in the case of the one from Fort Steilacoom and that from Genoa by the perceptibly lighter shade of blue and lighter chestnut on the sides of the breast.

partially correlated with locality, its absence or very slight development is the rule among the birds of this species resident on the high mountains of Lower California; that it is never (?) wholly absent though sometimes very slightly developed among those from the Pacific coast district north of Lower California, from which area most specimens have the chestnut on the back moderately developed, that is, almost always more or less interrupted (often widely) by blue along the median line; and that among those from the interior plateau region the back is, as a rule, entirely chestnut.

The series of resident Mexican birds is much too small to admit of even a guess as to which style of plumage prevails among them.

I have taken advantage of the opportunity offered by the large series of specimens brought together as the basis of this paper, to prepare descriptions of typical specimens of the several forms, representing the two sexes in these seasonal adult plumages, which are presented herewith, together with their principal synonymy and various critical observations.

The preparation of a 'key' for the ready identification of specimens has proven a matter of extreme difficulty, for the reason that no single character will serve for the definition of any form, the nearest approach to constancy of a single character being, so far as the material examined indicates, the much darker, more purplish, blue of the resident birds of southern Mexico and the wholly chestnut back of the birds from the plateau region of the United States.

I am aware the following attempt at a key is very unsatisfactory; but on account of the fact that our series of true *S. mexicana* is very inadequate, and not wholly sufficient as to the other forms (the proportion of specimens obtained during the breeding season being too small), it is the best I have been able to devise.

A. Chestnut color of back extremely variable in amount, sometimes entirely absent, but in the latter case chestnut of breast continuous anteriorly.

- a. Back usually (?) with little if any chestnut; blue of upper parts of a rich deep 'smalt' hue; wing in adult male averaging 4.38. (Highlands of southern Mexico.) 1. *S. mexicana* SWAINS.

- b. Back usually with much chestnut, often wholly so, very rarely with a mere trace; blue of upper parts varying from rich ultramarine to light cobalt; wing in adult male averaging 4.07.
- a¹. Back with median portion more or less blue, the chestnut sometimes restricted to a mere trace on each side. (Pacific coast, from British Columbia to southern California, east to western Nevada, casually, during migrations, to New Mexico.)
2. *S. m. occidentalis* (TOWNS.).
- b². Back wholly chestnut. (Rocky mountain district south to northern Mexico.)
3. *S. m. bairdi* RIDGW.
- B. Chestnut color of back and breast greatly reduced in extent, usually wholly wanting or barely indicated on the former, and divided into two lateral patches by backward extension of blue of throat on the latter. Blue of upper parts intermediate between 'smalt' and ultramarine; wing in adult male averaging 4.29. (Mountains of Lower California.)
4. *S. m. anabelæ* ANTHONY.

1. *Sialia mexicana* SWAINSON.

MEXICAN BLUEBIRD.

Sialia mexicana SWAINS. F. B.—A. II, 1831, 202, foot-note (tableland of Mexico¹).—SCL. P. Z. S. 1856, 293 (Cordova²); 1859, 362 (Jalapa²); Catal. 1862, 11 (part, Jalapa).—SUMICHR. Mem. Bost. Soc. I, 1869, 544 (alp. reg. of Mt. Popocatepetl).—SCL. and SALV. Nom. Neotr. 1873, 4 (Mexico).—BOUC. Cat. Av. 1876, 149 (Mexico).—SALV. and GODM., Biol. Centr. Am. I, pt. 6, 1879, 47 (part).—SEEBOHM, Cat. B. Brit. Mus., V, 1881, 331 (highlands of Mexico).

GEOGRAPHICAL RANGE.—Highest mountains of southern Mexico, (Orizaba, Popocatepetl, etc.) in summer, descending to the tableland in winter.

Adult male in breeding season (135,701, Cofre de Perote, Vera Cruz, Mexico, May 30, 1893; E. W. Nelson): Above uniform rich smalt-blue, darker (hyacinth blue) anteriorly; shafts of remiges and rectrices deep black, and tips of the former, especially on inner webs, dull blackish

¹"*SIALIA mexicana* SW. Size of *S. arctica*; upper plumage bright purple-blue, chin and throat the same; across the breast a rufous band, which color is continued on the sides and flanks; middle of the body, vent, and under tail covers light blue, inclining to white. Total length 6 1-2, wings 4 1-2, tarsi 3-4, tail 3 inches. Inhabits Mexico. In Mr. Taylor's collection."

² These localities, according to Prof. Sumichrast (l. c.), are probably incorrect.

slate. Chin, throat, and upper part of chest dull smalt-blue (decidedly, but not abruptly, paler and duller than top and sides of head); sides of chest, sides, and flanks chestnut-cinnamon, inclining to mars brown, this color extending rather narrowly across the upper breast, where, however, somewhat streaked with blue along the median line; lower median portion of breast, upper part of belly, axillars, and under wing-coverts, light, grayish smalt-blue, inclining to campanula-blue; the under tail-coverts similar but still paler, with basal portion and edges of feathers grayish white; lower belly and anal region dull grayish white. Bill and feet black. Total length (skin), 6.20; wing, 4.62; tail, 2.88¹; exposed culmen, 0.50; tarsus, 0.85; middle toe, 0.62.

Adult male in autumn (No. 135,709, Villar, San Luis Potosi, Mexico, Sept. 28, 1892; E. W. Nelson): Above purplish cobalt-blue, the back and scapulars overlaid or obscured by grayish brown wash occupying, broadly, the tips of the feathers; top of head similarly but more faintly obscured by brownish gray. Otherwise similar to the breeding plumage, as described above, but blue of under parts much paler (intermediate between 'campanula' blue and 'flax-flower' blue), except on axillars, under wing-coverts, and under tail-coverts, which are campanula blue, the latter with whitish margins. Cinnamon-chestnut of breast extending continuously across. Total length (skin), 6.65; wing, 4.35; tail, 2.73; tarsus, 0.82; middle toe, 0.60.

Adult female in breeding season (No. 135,705, Mt. Orizaba, Puebla, April 19, 1893; E. W. Nelson): Above dull grayish blue, becoming bright blue (intermediate between 'campanula' and 'cobalt') on rump, upper tail-coverts and tail, duller on the back, where inclining to drab-brown on scapular region, especially anterior portion; outermost primary with outer web broadly margined with pure white, and outer web of exterior tail-feather almost wholly pure white. Chin, throat, and malar region dull light bluish gray, the chin and upper throat very indistinctly mottled with darker; entire chest (except upper median portion, where mixed with gray of throat), upper breast, sides, and flanks, uniform rufous-cinnamon, deepest on sides of chest; median portion of lower breast light dull gray, fading to dull whitish gray on belly and anal region; under tail-coverts light grayish blue, broadly margined with white. Bill and feet black. Total length (skin), 6.20; wing, 4.30; tail, 2.70; exposed culmen, 0.43; tarsus, 0.82; middle toe, 0.60.

Adult female in winter (No. 135,711, Mt. Popocatepetl, Mexico, February 24, 1893; E. W. Nelson): Very similar to the specimen (in breeding plumage) described above, but back and scapulars uniformly warm brown ('Prout's' brown), and cinnamon-color of breast, etc., deeper as well as much more extensive (covering entire chest and breast, as well

¹ Extreme and average measurements of wing and tail of 7 adult males are as follows: Wing: Average, 4.38; longest, 4.62; shortest, 4.18. Tail: Average, 2.69; longest, 2.88; shortest, 2.50.

as whole of sides and flanks). Total length (skin), 6.25; wing, 4.25; tail, 2.60¹; exposed culmen, 0.40; tarsus, 0.82; middle toe, 0.58.

The six adult males of this form before me vary remarkably in coloration. The one in breeding plumage described above was selected as agreeing more closely with Swainson's original description than any of the others. Like Swainson's 'type,' this is absolutely without a trace of brown on the back or scapulars, and the uniform blue of the upper parts is of the same rich, dark purplish hue.

An adult male in similar condition of plumage collected on Mt. Orizaba, Puebla, April 19, by Mr. Nelson (No. 135,703, collector's number 1040), is in general appearance similar, but has a distinct patch of chestnut-brown on each side of the back (on outermost anterior scapulars), has the blue of the throat and lower breast paler and duller, and the cinnamon-chestnut of the breast much more extensive and absolutely unbroken in the median portion.

Another specimen from the same locality collected April 21 (No. 135,704) has these features still more pronounced, the chestnut of the back extending quite across on the anterior portion, and the whole breast, as well as the chest, being uniform cinnamon-chestnut, though not quite so deep in color nor so extensive as in the February specimen from Mt. Popocatepetl, mentioned below.

An adult male in perfect plumage from Mt. Popocatepetl obtained February 24, 1893, by Mr. Nelson (No. 135,710, collector's number 849), has the upper parts exactly as in the example just mentioned, but the under parts are still more extensively cinnamon-chestnut, this color occupying not only the whole of the chest, breast, sides, and flanks, but also the lower throat. The whole throat is faintly tinged with rusty, and the color of the breast, etc., approaches far more closely to chestnut than cinnamon.

An example in fresh autumnal plumage from the foot-hills near Charcas, San Luis Potosi (No. 124,903, November 13, 1891, P. L. Jouy) is not only wholly rich deep smalt blue above, but

¹ Average and extreme measurements of wing and tail in 4 adult females are as follows: Wing: Average, 4.26; longest, 4.30; shortest, 4.22. Tail: Average, 2.64; longest, 2.70; shortest, 2.55.

the lower parts are also chiefly blue (deep 'campanula'), fading into pale bluish gray on lower belly and anal region and relieved anteriorly by a large patch of chestnut extending from the sides of the chest to the flanks, but posteriorly narrower and broken by admixture of light grayish blue.

That the type of *S. mexicana* (described from a specimen "in Mr. Taylor's collection") came from some part of the State of Puebla, or immediately contiguous territory, is rendered probable through the re-discovery near Charcas, by Mr. P. L. Jouy, of *Aphelocoma cyanotis*, the type of which (without definite locality) was also collected by Mr. Taylor.¹

Females of this form may be at once distinguished from those of *S. m. occidentalis* and *S. m. anabelæ* (which are much alike) by the far deeper, more purplish blue of the upper parts, and altogether more distinct and extended cinnamonaceous color of the under parts. They are also decidedly larger, especially in length of wing.

2. *Sialia mexicana occidentalis* (TOWNSEND).

WESTERN BLUEBIRD.

Sialia occidentalis TOWNS. Jour. Ac. Nat. Sci. Philad. VII, 1837, 188 (Columbia R.).²—AUD. B. Am. II, 1841, 176, pl. 135.—NUTT. Man. 2d ed. I, 1840, 513.—HEERM. Jour. Ac. Nat. Sci. Philad. II, 1852, 264 (California).—WOODH. Sitgreave's Rep. 1853, 68.—HENRY, Proc. Ac. Nat. Sci. Philad. VII, 1855, 310 (New Mexico).—NEWB. P. R. R. Rep. VI, 1857, 80.—SEEBOHM, Cat. B. Brit. Mus. V, 1881, 332 (Pacific Coast U. S. to Rocky Mts., n. to Brit. Columb., s. to Colorado basin).

Sylvia occidentalis AUD. Biog. V, 1839, 41, pl. 393.

¹ Cf. Proc. U. S. Nat. Mus., —, —, —.

² "Description. Colour bright blue; shoulders and lower part of breast, chestnut-rufous; chin and upper part of the breast, azure; belly and vent faintly tinged with blue.

"Female and young, grayish, faintly tinged with blue, becoming brighter on the rump, wings and tail; beneath, pale rufous and gray. The bill is longer than that of the common native [*i. e.*, eastern] species, which it strongly resembles in many respects.

"Inhabits the plains of the Columbia River." (TOWNSEND, l. c.)

Townsend's types (adult male and female) are in the National Museum collection.

Sialia cæruleocollis VIG. Zool. Voy. Blossom, 1839, 18, pl. 3 (California?).¹

Sialia mexicana (nec SWAINS.) GAMB. Proc. Ac. Nat. Sci. Philad. III, 1846, 113 (California); Jour. Ac. Nat. Sci. Phil. I, 1847, 37 (do.).—SCL. P. Z. S. 1857, 126 (California); 1859, 235 (Vancouver I.).—BAIRD, B. N. Am. 1858, 223; Cat. N. Am. B. 1859, No. 159; Review, 1864, 63.—COOP. Orn. Cal. I, 1870, 28.—COUES, Key, 1872, 76; 2d ed., 1884, 258; Check List, 1873, No. 17; 2d ed. 1882, No. 28; B. N. W. 1874, 14; B. Col. Val. 1878, 80.—B. B. & R. Hist. N. Am. B. I., 1874, 65, pl. 5, fig. 2.—LAWR. Mem. Bost. Soc. N. H. II, 1874, 267 (Mazatlan; plains of Colima²).—RIDGW. Nom. N. Am. B. 1881, No. 23; Man. 1887, 581.—ANTHONY, Zœ, IV, No. 3, 1893, 247 (San Pedro Martir Mts., Lower Cal.; common during migrations).

GEOGRAPHICAL DISTRIBUTION.—Western United States in general (in wooded districts), north to British Columbia, east to Colorado, western Texas, and New Mexico, south to San Pedro Martir Mts., Lower California, western and northern Mexico (Mazatlan, Colima, Sonora, Chihuahua and Cohahuila). Apparently breeding to nearly the southern limit of its range.³

SUBSP. CHAR.—Smaller than true *S. mexicana*, with the blue color of upper parts much lighter (ultramarine or light smalt blue instead of deep

¹ "Sial. capite, gula, collo, corporeque superiori cæruleis; dorso interscapulari brunnescenti; pectore abdominisque lateribus rufis, hoc imo albescenti.

"Longitude corporis, 6 1-4; rostri, 5-8; alæ, a carpo ad apicem remigis secundæ, 4 1-2; caudæ, 3; tarsi, 7-8.

"This species may be distinguished from the *Sylvia sialis*, Lath., which forms the type of Mr. Swainson's genus *Sialia*, by the blue color of the throat in front, and the brown color of the back. The bill is also slighter than in the latter bird. A young specimen, or perhaps a female of the species, is in the collection, which has the colours much less vivid than in the adult bird; the rufous color of the lower body seems also to extend further up the throat. It, however, evinces its distinction from the young of the allied species by the slighter bill, and by a white mark extending over the outer web of the interior quill-feathers, at their base." (VIGORS, l. c.)

No locality is mentioned, but the specimens on which the above descriptions were based were either from California or the west coast of Mexico.

² I have not seen Col. Grayson's Mazatlan specimens, but an adult male and female collected by Xantus on the plains of Colima, in October, 1863, now in the National Museum Collection, are of this form.

³ An adult female from Saltillo, Cohahuila, obtained by Lieut. Couch in May, 1853, is in worn breeding plumage. Even in the San Pedro Martir Mountains, Lower California, where it is said to be "very common during migrations from sea level to the top of the range," a few remain, according to Mr. Anthony (l. c.) "to nest with the local race."

smalt); female with cinnamomeous color of under parts paler and much less extensive.¹

a. TYPICAL FORM (true S. m. occidentalis).

Adult male in spring (type, No. 1930, Columbia River; J. K. Townsend): Upper parts rich cobalt blue; sides of upper back (not scapulars) chestnut, forming two somewhat wedge-shaped patches, nearly connected anteriorly, the median feathers of the upper back being tipped with chestnut; tips of remiges (broadly) brownish dusky. Sides of head and neck, chin, throat, and chest cobalt-blue, rather lighter than upper parts; sides of breast wholly chestnut, this color extending across the upper breast and posteriorly over the sides to the flanks, where considerably paler; median lower breast or upper belly light grayish blue, fading into dull white on lower belly and anal region; under tail-coverts pale grayish blue margined with grayish white, and with dusky shafts. Bill deep black; legs and feet dark brown. Total length (skin), 6.10; wing, 4.10; tail, 2.55; exposed culmen (tip of bill broken); tarsus, 0.80; middle toe, 0.60.

Adult male in autumn (No. 107,287, Humboldt Bay, California, Nov. 21, 1885; Chas. H. Townsend): Similar to the male in spring, as described above, but feathers of hinder half of head, neck, back, chin, throat, and chest indistinctly tipped with pale brownish gray, considerably obscuring the blue, which on the chin, throat, and chest is considerably paler than on the upper parts; feathers of chestnut patch on breast tipped with paler; remiges and rectrices with narrow terminal margins of whitish. The blue is of a much more purplish hue than in the type, and the chestnut color on the sides of the back is more restricted, but these are individual, not seasonal, differences. Total length (skin), 6.00; wing, 4.05; tail, 2.48; exposed culmen, 0.43; tarsus, 0.75; middle toe, 0.55.

Adult female in spring (No. 82,590, Marin Co., California, April 15, 1878; C. A. Allen): Top of head and hind-neck mouse-gray, faintly tinged with light blue, especially on hind-neck; back and scapulars hair-brown, becoming paler and grayer, and tinged with light blue, posteriorly; rump, upper tail-coverts, lesser wing-coverts, and tail cerulean blue, brightest on rump; outer web of lateral tail-feather broadly edged with white; middle wing-coverts dusky, margined with grayish blue; greater coverts and tertials deep grayish brown margined with light brownish gray; primary-coverts similar, but strongly tinged with blue; outer webs of primaries light glaucous-blue, narrowly edged with whitish, the outermost one broadly and sharply edged with pure white. Sides of head grayish brown, more decidedly brown on ear-coverts, the eyes encircled

¹ Average and extreme measurements of wing and tail in a series of 82 adult males (including both true *occidentalis* and *bairdi*) are as follows: Wing: Average, 4.20; longest, 4.55; shortest, 3.90. Tail: Average, 2.63; longest, 2.80; shortest, 2.40.

by an indistinct orbital ring of dull grayish white; malar region, chin, and throat, pale grayish brown; whole breast dull light cinnamon, this color extending (more faintly) over sides but disappearing on flanks; rest of under parts similar in color to throat, passing into dull whitish on lower belly and anal region; lower tail-coverts grayish blue centrally, with blackish shaft-streaks, and broadly margined with grayish white. Bill and feet brownish black. Total length (skin), 6.10; wing, 3.95; tail, 2.45; exposed culmen, 0.45; tarsus, 0.82; middle toe, 0.60.

Adult female in autumn (No. 2,949, Columbia River; J. K. Townsend): Similar to the spring plumage, as described above, but colors more suffused, the blue less bright, top of head and hind-neck more strongly tinged with blue, whitish orbital ring much more distinct, the breast and sides deeper cinnamon-brown. Total length (skin), 6.50; wing, 3.97; tail, 2.42; exposed culmen, 0.45; tarsus, 0.85; middle toe, 0.63.

b. CHESTNUT-BACKED FORM (S. m. bairdi).

*Adult male in spring*¹ (type of *S. m. bairdi* Ridgw., No. 7637, Camp 110, "New Mexico," Jan. 31, 1854; Kennerly and Möllhausen): Head and neck all round, chest, and upper parts except back and scapulars, rich ultramarine-blue, with a tinge of smalt-blue, rather paler on chin, throat, and chest; entire back, including most of the scapulars, uniform chestnut, forming a 'solid' shield-shaped patch, abruptly defined anteriorly against the blue of the hind-neck; upper tail-coverts with indistinct blackish median streaks; ends of remiges abruptly blackish dusky, with very narrow but distinct terminal margins; shafts of remiges and rectrices glossy black. Entire breast (except lower median portion), sides, and flanks, uniform chestnut, of a rather lighter more rusty shade than that on the back; lower median portion of breast and upper part of abdomen, bright grayish blue, like throat and chest; rest of belly light bluish gray becoming whitish about the anal region; under tail-coverts light campanula-blue, margined with white. Bill and feet black. Total length (skin), 6.60 (6.25 before skinning); wing, 4.35; tail, 2.75; exposed culmen, 0.45; tarsus, 0.80; middle toe, 0.52.

Adult male in autumn (No. 68,442, Black River, Arizona, Oct. 7, 1874; H. W. Henshaw): Similar to the spring plumage, as described above, but blue of head, neck and chest obscured by brownish gray tips to the feathers (these more rusty on the chest), chestnut of back and scapulars duller and broken by paler tips to the feathers, that of the chest also varied with paler tips; blue of upper belly and median lower breast rather paler and duller. Total length (skin), 6.20; wing, 4.43; tail, 2.85; exposed culmen, 0.40; tarsus, 0.80; middle toe, 0.58.

¹ Although the date is so early the plumage is in perfect condition, without a trace of the paler, duller tips to many of the feathers which characterize the autumnal and early winter dress.

Adult female in spring (No. 41,230, Ft. Whipple, Arizona, April 29, 1865; E. Coues): Practically identical in coloration with No. 82,590, Marin Co., California (described previously), but buffy cinnamon of breast tinging chest and throat, instead of being sharply defined against the clear light drab-gray of chest. Total length (skin), 6.30 (6.60 before skinning); wing, 4.15; tail, 2.47; exposed culmen, 0.45; tarsus, 0.75; middle toe, 0.60.

Adult female in autumn (No. 69,216, Apache, Arizona, Oct. 24, 1874; H. W. Henshaw): Practically identical in coloration with No. 2949, described on page 157. Total length (skin), 5.95; wing, 4.00; tail, 2.50; exposed culmen, 0.43; tarsus, 0.75; middle toe, 0.55.

In adult males of the Coast form, the blue varies from the light azure hue of the type to a clear purplish smalt blue in No. 21,425, Ft. Crook, Cal. (October 22). Both these extremes are very unusual, however, no other examples in the entire series approaching either of them very closely. Among the remainder, the blue ranges from a hue intermediate between smalt and ultramarine to pure ultramarine.

The only specimen which, at first sight, seems to have no chestnut on the back is No. 13,281, Genoa, Nevada (June 20); but close inspection discovers traces of chestnut in the form of edgings to some of the feathers on each side of the upper back. This example also has the blue of the chest extended to the belly, completely dividing the chestnut of the breast. It is also unusually large, the wing measuring 4.35, the tail 2.80. It thus approaches in all these characters *S. m. anabelæ*, but may be at once separated by the much more slender bill. Specimens in perfect adult spring plumage (as No. 82,589, Nicasio, California (April 11) show little if any difference in intensity of color between the blue of the throat and chest and that on top of the head.

Adult males of the Rocky Mountain form average perhaps a little more purplish blue than the coast form, the extremes being cobalt and smalt-blue, the average hue being intermediate between smalt and ultramarine, but nearer the former. Several males of this form show very distinct black mesial streaks on the upper tail-coverts (*e. g.*, No. 105,258, El Paso Co., Colorado. March 30, and No. 41,227, Ft. Whipple, Arizona, April 19).

I have been unable to detect any difference between females of the two forms. There is a considerable amount of individual

variation in this sex, affecting chiefly the blue color, which varies from light cobalt or azure to very nearly a verditer hue, with a decided greenish tinge to the edges of the rectrices; the distinctness of blue tinge to color of pileum and hind-neck, and the color of the back, which is always distinctly browner than adjacent parts, and, strange to say, sometimes more distinctly brown in coast specimens than those from the interior.

3. *Sialia mexicana anabelæ* ANTHONY.

SAN PEDRO BLUEBIRD.

Sialia mexicana anabelæ ANTHONY, Proc. Cal. Ac. Sci. 2d ser. II, Oct. 1889, 79 (San Pedro Martir Mts., Lower Cal.); Zoe, IV, No. 3, 1893, 247 (in text, under *S. mexicana*).—A. O. U. COMM. Auk, Jan. 1890, 66.

GEOGRAPHICAL RANGE.—San Pedro Martir Mountains, Lower California (resident).

SUBSP. CHAR.—Differing from true *S. mexicana* in shorter wing, the tail averaging a little longer; lighter blue above; lower parts with much more blue; the chestnut color often confined to a patch on each side of the breast. Differing from *S. m. occidentalis* in longer wing and tail, larger bill, and less extent of the chestnut color, both above and below, that of upper parts never extensive, and usually nearly, often quite, wanting, that of under parts usually confined to a patch on each side of breast. *Females* to be distinguished from those of *S. m. occidentalis* only (?) by stouter bill.

Adult male in spring (type, coll. A. W. Anthony, San Pedro Martir Mts., Lower California, May 6, 1889): Upper parts entirely rich smalt-blue, inclining to ultramarine in certain lights, without even a trace of blue on back or scapulars; greater part of inner webs of tertials and tips of all the remiges (broadly) dull black; shafts of remiges and rectrices glossy black. Lower parts rich blue (intermediate between smalt and ultramarine), nearly as intense anteriorly as color of upper parts, but fading to light grayish blue on belly, which becomes lighter, scarcely bluish, gray centrally; under tail-coverts campanula-blue. A patch of chestnut on each side of breast, separated by a bright blue space about 0.80 of an inch wide. Bill, legs, and feet deep black. Total length (skin), 6.20; wing, 4.32; tail, 2.90¹; exposed culmen, 0.47; tarsus, 0.75; middle toe, 0.55.

¹ Average and extreme measurements of wing and tail of 41 adult males are as follows: Wing: Average, 4.29; longest, 4.48; shortest, 4.10.

Adult female in spring (same locality, May 1, 1889; A. W. Anthony): Top of head, hind-neck and sides of neck brownish gray distinctly glossed with lavender-blue; ear-coverts deeper brownish gray, or drab, without blue gloss; chin pale gray; throat and upper chest similar but tinged with fawn-color; breast and sides russet-cinnamon, paler on flanks; belly light smoke-gray; under tail-coverts light grayish blue, margined with white, and with narrow dusky shaft-streaks. Back and scapulars dull grayish brown, tinged with purplish cinnamon, the median portion of the back glossed with grayish blue; lesser and middle wing-coverts bright smalt-blue; greater coverts and tertials duller, more grayish, blue, margined with dull light grayish; secondaries and primary-coverts dull smalt-blue, dusky at tips, and edged with paler; primaries and rectrices campanula-blue, becoming dusky at tips, the outer web of exterior primary and tail-feathers broadly edged with white; lower back, rump, and upper tail-coverts bright campanula-blue, or light smalt-blue. Bill and feet black. Total length (skin), 6.40; wing, 4.15; tail, 2.80¹; exposed culmen, 0.45; tarsus, 0.80.

In the series of 44 adult males examined there is naturally a considerable amount of individual variation in plumage. That affecting the development of the chestnut color on back and breast may be summarized as follows:—

With no chestnut whatever on back or scapulars.	21
With the back chiefly blue.	18
With the back about equally blue and chestnut.	4
With the chestnut of the breast divided.	30
With the chestnut of the breast continuous anteriorly.	11
Not belonging strictly to either category.	2

In addition to this individual variation in the development of the chestnut there is a very slight one in the shade of the blue, which ranges from almost a 'smalt' hue to rich ultramarine; but the variation in this respect is far less than in either true *S. mexicana* or either of the northern races.

Unfortunately there are no specimens in Mr. Anthony's series representing either sex in autumn or winter plumage, all his specimens having been obtained during the breeding season.

¹ Average and extreme measurements of wing and tail in 18 adult females are as follows: Wing: Average, 4.13; longest, 4.27; shortest, 4.00. Tail: Average, 2.62; longest, 2.70; shortest, 2.45.

DESCRIPTION OF A NEW SPECIES OF *PIPILO*
FROM MOUNT ORIZABA, MEXICO.

BY ULYSSES O. COX.

While on Mount Orizaba, Mexico, as a member of Dr. Scovell's party during the summer of 1891 I made a small collection of birds of the region which Mr. Robert Ridgway of the U. S. National Museum has had the kindness to identify for me. Among them Mr. Ridgway finds a *Pipilo* which appears to be a new species. I have given it the specific name *orizabæ* and append here Mr. Ridgway's description and comparison with related species.

Pipilo orizabæ Cox, sp. nov.

"SP. CHAR.—Most like *P. maculatus* Sw., but no black whatever on upper parts, which are plain grayish brown; white markings of scapulars and wing feathers nearly obsolete, sides and flanks much paler in color, and size somewhat greater.

"*Adult male* (No. 132,72♂, U. S. National Museum, Mount Orizaba, Mexico, alt. 11,000 feet; Ulysses O. Cox): Above uniform dull grayish brown, slightly tinged with olive, scarcely darker on the head; outermost scapulars with marginal elongated spots of white, and lowermost middle and greater wing-coverts with more roundish terminal spots of the same; no white markings on remiges, but primaries edged with light brownish gray; tail (except middle feathers) very dark brown, the three outermost feathers with a large, abruptly defined, white spot terminating inner webs, that on the lateral feather nearly 1 inch long. Chin, throat, and chest blackish brown, gradually lightening on sides of head and grading gradually into color of crown, the throat spotted with white beneath the surface; sides, flanks, and under tail-coverts ochraceous-buff, somewhat deeper anteriorly; median lower parts white, broadest and purest anteriorly, next to blackish brown of the chest. Bill black; legs light brown, toes darker. Total length (skin), 8.30¹; wing, 3.35; tail, 3.85; exposed culmen, 0.60; tarsus, 1.17; middle toe, 0.78.

"This bird is obviously quite distinct from both *P. maculatus* and *P. macronyx*, as well as their hitherto described allies. The pure white and abruptly defined tail-spots, and entire

¹ Before skinning, 21 cm., = about 8.27 inches.

absence of green or yellow from any part of the plumage separate it at once from *P. macronyx*, *P. virescens* and *P. complexus*; the entire absence of black from the upper parts from *P. maculatus* and *P. submaculatus*, while it differs from all in having the entire top and sides of the head grayish brown, like the back, instead of black, like the chest. The general color of the upper parts is very much that of the darker examples of *P. fuscus*, but the color has, in certain lights, a very preceptible olivaceous cast."

BIRDS OF ONEIDA COUNTY, NEW YORK.

BY EGBERT BAGG.

SINCE the publication of the article by Dr. Ralph and myself in 'The Auk' for July, 1890, I have been able to add the following to our local list. These eight new records, together with *Vireo solitarius plumbeus*, recorded from the adjoining county of Madison, by Gerrit S. Miller, Jr., in the last number of this journal, make the total number of species and subspecies recorded from "Oneida County, N. Y., and its immediate vicinity" two hundred and thirty-nine.

Rissa tridactyla.—A young male of this species was killed at Constantia, Oswego Co. (on Oneida Lake), Nov. 9, 1890, by Robert J. Hughes.

Rynchops nigra.—I have lately examined a specimen of this bird in a taxidermist's shop in Utica, which was brought in in the fall of 1893 (October?) and reported to have been killed near Whitesboro. Baird, Brewer, and Ridgway say of this species: "It is never known to be driven astray by any storm, however violent."

Æstrelata hasitata.—A male of this rare straggler was shot at Verona Beach, on Oneida Lake, August 28, 1893, by the Rev. G. A. Biederman, who presented it to Alex. H. Moore, a young ornithologist of Utica, who mounted and preserved it. Mr. B. reports that there were two birds together, but careful search shortly afterward failed to find the other, and it may have been some other species. Through the courtesy of Mr. Moore, who brought the bird to me for identification while in the flesh,

and who loaned it to me after it was mounted, I was able to secure accurate measurements and fairly good photographs of this bird.

The stomach was empty. The coloration was exactly as given by Dr. Coues, as quoted by Baird, Brewer, and Ridgway. The measurements were as follows: Length, 16 in.; wing, 10; tail $5\frac{1}{2}$, its graduation, $1\frac{1}{2}$; bill, $1\frac{1}{2}$, $\frac{2}{3}$ deep, $\frac{1}{2}$ wide; tube, $\frac{3}{8}$; tarsus, $1\frac{1}{2}$; middle toe and claw, $2\frac{1}{4}$.

***Branta nigricans*.**—A fine specimen of this rare bird was killed by Mr. Augustus Dexter of Utica at Lewis Point, Madison County (on Oneida Lake), Oct. 30, 1891. The bird flew in from the lake and alighted on the sand beach, where it was attacked by Crows. These birds attracted its attention so that Mr. Dexter easily walked within range and secured the bird.

***Ardetta exilis*.**—A good specimen of this Bittern was killed at New York Mills, by Mr. Charles C. Trembley of Utica, May 30, 1892. This bird is a very common summer resident, breeding in the marshes of the Seneca River only a short distance west of Oneida Lake (about 35 miles as the crow flies), and connected with it by water courses (the Seneca and Oneida Rivers uniting to form the Oswego), and it has therefore been a bird which we have always expected to find in our neighborhood, but this is our first record.

Tringa canutus—A young bird was taken at Lewis Point, Oneida Lake, in Madison County, Aug. 26, 1891.

***Limosa hæmastica*.**—A specimen was killed about a mile west of Lewis Point, Sept. 7, 1891, and another near the same place a few weeks later. The plumage of the first of these was in a transition state between that of winter and summer, and there was quite a white patch on the wing.

***Dendroica cærulea*.**—A fine male in full plumage was taken at Clinton, May 9, 1890.

In addition to the above new records, the following are worthy of mention.

***Hydrochelidon nigra surinamensis*.**—Given in the list on the authority of others only. One in the collection of Alex. Moore of Utica, identified by the writer, was taken at Utica in April, 1893.

***Phalacrocorax carbo*.**—Given in the list on the authority of others only. I have had the pleasure of examining a fine specimen, killed on Oneida Lake, Oct. 13, 1890. The taxidermist who mounted it informed me that "the stomach contained a small fish and a soft-shell crab." How long was this bird from salt water?

***Rallus virginianus*.**—Given in the list as "Not uncommon"; should be changed to "Not uncommon summer resident. Breeds," a nest and eggs having been taken in New Hartford by Chas. C. Trembley.

***Gallinula galeata*.**—Mr. Trembley reports the taking of a specimen in New Hartford a few years ago, an additional record.

***Tringa fuscicollis*.**—Several killed on the south shore of Oneida Lake, Nov. 3, 1891. An additional record.

Progne subis.—Given as “A not uncommon summer resident. Breeds.” Has practically disappeared; within the last few years an occasional migrant is all that has been seen.

Troglodytes ædon.—I am happy to say that these birds, which had entirely disappeared for several years, have reappeared. I have records of several pairs breeding in this locality in 1893.

Urinator lumme.—One on exhibition at Sylvan Beach in 1891 was killed at Durhamville several years previously. An additional record.

THE GROUND CUCKOO OF ANDROS ISLAND.

BY GERRIT S. MILLER, JR.

ON APRIL 24, 1893, Mr. C. J. Maynard collected an adult female *Saurothera* at Fresh Creek, Andros Island, Bahamas. This specimen, which soon after came into my hands, differed from any skins of *Saurothera bahamensis* that I had seen, and at once raised the question whether the Andros Island bird was not distinct from that found on New Providence. Although Mr. Maynard was firmly convinced that this was the case, the amount of material then at my disposal did not warrant any separation of the forms. Recently through Mr. C. B. Cory's kindness I have examined about a dozen Bahaman Ground Cuckoos, including three additional specimens from Andros Island. This material shows that the bird inhabiting Andros Island is an insular form readily distinguishable from the New Providence bird. As the type of *Saurothera bahamensis* came from Nassau¹ the Andros species may stand as:

Saurothera andria, sp. nov.

Saurothera bahamensis NORTHIROP, Auk, VIII, Jan. 1891, 74; CORY, Catalogue W. I. Birds, 1892, 142 (part).

SPEC. CHAR. Slightly smaller than *Saurothera bahamensis* Bryant; colors throughout darker; bill proportionately deeper through base.

¹ Bryant, Proc. Bost. Soc. Nat. Hist. IX, Feb. 1864, 280.

Adult: (Type, ♀, No. 5608, collection of G. S. Miller, Jr., Fresh Creek, Andros Island, Bahamas, April 24, 1893, C. J. Maynard, collector), dorsal surface, except bases of primaries and tips of lateral rectrices, olive shading toward hair brown on head, everywhere, but especially on wings and tail, glossed with chromium green; basal two-thirds of primaries strongly tinged with cinnamon; breast drab, becoming paler on throat, darker on sides and shading quickly into tawny olive on the belly, flanks, thighs and under tail-coverts; ventral surface of tail lustrous olive gray, the three outer feathers with a subterminal bar of black (about 11 mm. wide), widest on the outer web, and tipped with white (8 mm.) the middle pair unmarked and the next pair with very narrow white tips and a dusky subterminal spot in each web; bill (dry) slaty black at base, cutting edges, and greater part of mandible, primrose yellow, the latter slightly varied with slate color; claws black; tarsi and toes blackish slate.

As compared with *Saurothera bahamensis* this species is readily distinguishable by its darker colors and differently shaped bill. An adult female of the former (No. 4053, collection of G. S. Miller, Jr., Nassau, Jan. 27, 1884, C. J. Maynard) is hair brown on the back and head, fading to broccoli-brown on the neck, the feathers everywhere glossed with sage green. The breast is drab gray, becoming slightly paler on the throat, darker on the sides, and shading quickly to buff on the belly, flanks, thighs, and under tail-coverts. The axillars and linings of wings are ochraceous buff, paler on the carpus and deepening into clay color on the inner webs of most of the primaries where the colored area is less extensive than in *S. andria*.

Although there are, in both species, some slight individual variations in color, the differences shown by the two specimens just described very fairly represent the average of the specimens that I have seen.

Saurothera bahamensis Bryant (average of five specimens): wing, 156; tail, 278; tarsus 40.7; bill (from nostril), 38; depth through nostril, 12.6; ratio of depth to length, 33.82.

Saurothera andria Miller (average of four specimens): wing, 152; tail, 257; tarsus, 37.7; bill (from nostril), 37; depth through nostril, 14.5; ratio of depth to length, 39.09.

RECENT LITERATURE.

Nehrling's Birds.¹—The favorable opinion expressed (Auk, VII, Jan. 1890, p. 70) of this work upon the appearance of its first two Parts is fully justified in the event of the completion of Volume I, which reaches us in a very handsome exterior. We believed then that Mr. Nehrling had a message to deliver, and were not mistaken. From his earliest boyhood he has studied birds in their native haunts, and has taken time to tell us what they taught him. His life-histories are based chiefly upon his own observations, made during many years from Wisconsin to Florida and Texas; where original research has failed to reach, he has known how to draw upon various sources which need not be here specified. "For the purpose of studying the life of our birds I spent several years in Texas, five years in the Ozark region of southwestern Missouri, and a number of years in different parts of Illinois. I also visited the southern Alleghanies and different localities in Louisiana, Arkansas, Mississippi, Alabama, Georgia, Florida, etc. Yet this work would be incomplete should I have neglected to quote freely from the writings of our great American ornithologists of the present time." Those to whom such characterization may apply will no doubt be glad to find that anything they have written has served so excellent a purpose as Mr. Nehrling's. It would not be difficult to characterize his work in words of our own, but we will hear what the author has to say of his intent. Authors' opinions of their own performances are often as reliable as any reviewer's can be, and never more so than when a modest and entirely honest author speaks of what he set about to accomplish. "In the present work," says its author in his preface, "which is intended to fill the gap between the very expensive and the merely technical ornithological books, I aim 'to combine accuracy and reliability of biography with a minimum of technical description,' and to have the work 'illustrated in such a way that all figures are recognizable.' Although this work is written for all lovers of natural history, I specially endeavor to inspire our young people with a tender regard for the feathered minstrels of our woodlands, fields and meadows, groves and gardens."

We can congratulate Mr. Nehrling upon the entirely successful accomplishment of his designs. We should say much more in the present instance, had it not fallen to our reviewing lot to have spoken quite to

¹ Our Native Birds | —of— | Song and Beauty, | being | A Complete History of all the Songbirds, Flycatchers, Hummingbirds, Swifts, | Goatsuckers, Woodpeckers, Kingfishers, Trogons, Cuckoos | and Parrots, of North America. | — | By Henry Nehrling, | [etc.]—With thirty-six colored plates after water-color paintings | by Prof. Robert Ridgway, [etc.], | Prof. A. Goering, Leipzig, and Gustav Muetzel, Berlin. | — | Volume I. | — | Milwaukee: | George Brumder. | 1893. Large 4to or sm. fol., pp. i-l, 1-371, pll. col'd. i-xviii, some figg. in text; ed. le luxe, full Russia, gilt-edged, rubricated margins and title.

the point before, and we must not be guilty of plagiarizing — no, not even of auto-plagiarism. The faithful readers of 'The Auk' have been given the reference, and can easily turn to what would otherwise be said at the present juncture. We have not a word of that notice to retract or modify. Mr. Nehrling's book has taken, and will doubtless long maintain, the position he himself assigns as fitting, and no author could desire more than this. He has written to good purpose; his work should have a long, prosperous, and useful life. Nehrling will probably awake some day to find his writings ranked with those it becomes customary to call 'classic,' when their respective authors have forgotten alike the pangs and pleasures of delivery, and grown insensible to silence or applause.

As the present Volume I contains 18 plates, and 36 are promised per title, we understand it is to be followed by one more of like proportions. The present volume seems to be entirely Oscinine, and Mr. Nehrling may have to put on his thinking-cap if he is to bring the rest of the Passerines and all the Picarians into the category of "birds of song and beauty." We are not informed regarding any business aspect of the work, and its consequently necessary limitations, but Mr. Nehrling's plan seems to us capable of expansion beyond the advertised limits. All birds do not sing, but all are beautiful to one who understands them and keeps in touch with them as well as Mr. Nehrling does. We imagine that the publication should be immensely popular and that the publisher would be justified in amplifying its scope, until all our birds are brought under the one elastic category, for the like treatment at a Nehrling's hand. To cite an instance, there are the game-birds, in which a very large number of non-ornithological ornithologists are always interested. "Bobwhite" sounds well, one of the Ducks sings well enough to have been named *Anas cantans*, and *Aix sponsa* is certainly a bird of beauty. But we desist, for we are in danger of falling into that easiest and worst of reviewing sins — telling an author what he ought to do, instead of informing the public how well or ill he has done that which he designed to do.

The plates of this work are of an uneven order of merit. If we may be permitted to express an individual preference, without entering into invidious comparisons, we may say that those of the Goldcrest and Gnat-catcher please us most, and it should not be difficult to maintain that degree of excellence.

With hearty welcome, congratulations, and hopes for the speedy completion of a work which departs so widely from the average of its kind in making so near an approach to such as Audubon typifies,—E. C.

Anthony on the Birds of San Pedro Martir, Lower California.¹—This is a liberally annotated list of 121 species, based on the author's personal observations, made chiefly during the month of May, 1893. "The region embraced in the name of San Pedro Martir consists of a high plateau of

¹ Birds of San Pedro Martir, Lower California. By A. W. Anthony. Zoc, Vol. IV, 1893, pp. 228-247.

about sixty-five or seventy miles in length by twenty in width. . . . The northern end rises to a height, in one or two peaks, of 12,500 feet, estimated, and from that point the ridges and peaks drop away by degrees until at the southern end they merge into the low, barren hills, common to the peninsula at this point." A few rather important corrections are made of notes furnished by Mr. Anthony to Mr. Bryant's 'List of the Birds of Lower California,' published a few years since, due mainly, it appears, to their accidental insertion under the wrong species, as in the case of Harris's Hawk and the Red tailed Hawk, but sometimes to misidentification, as in the case of the Horned Larks, where the form found at San Quintin is the *Otocoris alpestris pallida* instead of *O. a. rubea*. More to the northward *chrysolæma* is the race found in the breeding season. The paper forms a welcome and valuable addition to our knowledge of the distribution of the birds of Lower California, and especially of this previously little known portion of the peninsula.—J. A. A.

Short's Birds of Western New York.¹—This is a briefly annotated list of 207 species, but its exact geographical scope is not defined, "Western New York" being a somewhat indefinite term. While the list is evidently prepared with care, and its statements may doubtless be taken as trustworthy, it is not typographically pleasing, the specific names all beginning with capital letters and the Latin names being printed in the same kind of type as the general text. It is, moreover, liberally sprinkled with printer's errors. The list is certainly worthy of a better presentation. Acknowledgments are made for assistance to Frank H. Lattin, Neil F. Posson and Leslie V. Case. We note that the American Eared Grebe is given in place of Holbøll's Grebe, and the Yellow-bellied Flycatcher as a "rare summer resident and breeder." These are the only records that seem improbable, while the last may not be altogether so in some part of the region covered by the list.—J. A. A.

Ridgway on the Genus *Myiarchus*.²—The genus is divided into four "sections" or subgenera, two of which are new. These are (1) *Myiarchus* Cab., including the greater part of the species usually referred to the genus *Myiarchus*; (2) *Onychopterus* Reich., including *M. tuberculifer* (D'Orb.), *M. lawrencii* (Gir.), and *M. barbirostris* (Sw.); (3) *Eribates* Ridgw., type *Myiobius magnirostris* Gray; (4) *Deltarhynchus* Ridgw., type *M. flammulatus* Lawr. Mr. Ridgway regards *M. yucatanensis* as a typical member of the restricted *Myiarchus*, differing from the *M. lawrencii* and *M. l. olivascens* in its "approximately cylindrical" instead of "distinctly depressed" bill, larger size and rather lighter coloration.—J. A. A.

¹ Birds of | Western New York, | with Notes. | By | Ernest H. Short. | Chili, N. Y. | August 1st, 1893. 8vo. pp. 13.

² Remarks on the Avian Genus *Myiarchus*, with special reference to *M. yucatanensis* Lawr. By Robert Ridgway. Proc. U. S. Nat. Mus., XVI, 1893, pp. 605-608.

Ridgway on a Small Collection of Costa Rican Birds.¹—The collection consists of 10 species of little-known birds, which are here further described from specimens submitted for examination by the authorities of the Costa Rica National Museum. Several of them are species recently characterized by Mr. Ridgway and Mr. Cherrie, and one is here described as new, namely "*Buthraupis cæruleigularis* Cherrie, sp. nov." The status of *Tachyphonus rubrifrons* Lawr. is considered, *Antrastomus rufomaculatus* Ridgw. is referred to *A. saturatus* Salvin, and considerable additional material relating to a number of other species is described, particularly *Platypharis aglaie* Ridgw. and *Scytalopus argentifrons* Ridgw.—J. A. A.

Ridgway on a Collection of Birds from Alaska.²—This is a briefly annotated list of 35 species, collected by Mr. C. H. Townsend at Kodiak, the Shumagins, and other points along the Alaskan coast, principally in August, 1888. The notes give simply the localities and dates of the specimens collected, with in addition a description of the first plumage of the Western Winter Wren (*Troglodytes hiemalis pacificus*).—J. A. A.

Ridgway on a New Storm Petrel.³—The Storm Petrel heretofore known as *Oceanodroma melania* (Bon.) is here renamed *Oceanodroma townsendi*, as "a series of nine finely prepared skins of this species, collected by Mr. C. H. Townsend off Guaymas and Acapulco, Mexico, proves," says Mr. Ridgway, "that this bird cannot be the *Thalassidroma melania* of Bonaparte, neither the dimensions nor the coloration agreeing at all closely with the latter." The habitat is given as "off coast of Mexico, north to Cape St. Lucas and Guaymas." The specimen (No. 13.025) selected as type was taken at Cape St. Lucas many years since by Mr. J. Xantus. The date of capture of none of the specimens is here given.—J. A. A.

Ridgway on the Genus *Formicarius*.⁴—This revision of the difficult and little-known genus *Formicarius* is based on a "series of nearly sixty specimens," which serves to make quite clear a number of doubtful

¹ On a small Collection of Birds from Costa Rica. By Robert Ridgway. Proc. U. S. Nat. Mus., XVI, 1893, pp. 609-614.

² Catalogue of a Collection of Birds made in Alaska by Mr. C. H. Townsend during the Cruise of the U. S. Fish Commission Steamer *Albatross*, in the Summer and Autumn of 1888. By Robert Ridgway. Proc. U. S. Nat. Mus., XVI, 1893, pp. 663-665.

³ Description of a New Storm Petrel from the Coast of Western Mexico. By Robert Ridgway. Proc. U. S. Nat. Mus., XVI, 1893, pp. 687, 688.

⁴ A Revision of the genus *Formicarius* Boddaert. By Robert Ridgway. Proc. U. S. Nat. Mus. XVI, 1893, pp. 667-686.

points, but, says Mr. Ridgway, "the material is still far from adequate for a satisfactory treatment of the subject, immense areas of South America and considerable portions of Central America being absolutely unrepresented." One of the results is the discovery that "three very distinct forms of the *analís* section of the genus occur in Costa Rica," and that the form usually referred to *F. analís* is really not that species at all, but *F. nigricapillus* Cherrie, MS., here for the first time described. Of the 12 species recognized by Mr. Ridgway 10 were represented in the material under examination. The provisional name *Formicarius nigrifrons glaucopectus* is proposed for "three Guiana birds" which appear to differ from true *nigrifrons* of the Upper Amazon. The probable intergradation of a number of the forms here treated as species is intimated.—J. A. A.

Stejneger on Japanese Birds.¹—Of the forty odd species here commented upon eight are given as new to the avifauna of Japan, and five are described as new to science. The latter are *Æstelata longirostris*, *Columba taczanowskii*, *Accipiter fallens*, *Locustella kondoensis* and *Emberiza ciopsis ijimæ*. In commenting on *Oceanodroma markhami* (Salv.) Dr. Stejneger refers incidentally to *O. melania* (Bon.), considering that "the two Mexican birds, the type and the [Cape St. Lucas] specimen in the National Museum" as "true *O. melania*." But Mr. Ridgway (see above, p. 169) has since made the Cape St. Lucas bird (No. 13,025, U. S. Nat. Mus.) the type of his recently described *Oceanodroma townsendii*. (Cf. Ridgway, Proc. U. S. Nat. Mus. XVI, 1893, p. 687.)

Dr. Stejneger has also an important note on *Æstelata brevipes* (Peale), in which he claims that *Æ. brevipes* is not a synonym of *Æ. leucoptera* (Gould), as commonly supposed; on the other hand, *Procellaria torquata* Macgillivray (1860) he finds to be a synonym of *Procellaria brevipes* Peale (1848). He also finds that the bird previously recorded by him as *Æ. leucoptera* (Proc. U. S. Nat. Mus. XIV, 1891, p. 490) is the *Æ. hypoleuca* Salv., as shown by recent examination of authentic material. There are also a couple of pages of critical observations on *Yungipicus kizuki* and *Y. k. seebohmi*, and much criticisms of Mr. Seebohm's views on the nomenclature and relationships of Japanese birds.—J. A. A.

Richmond's Notes on Nicaraguan Birds.²—So many lists of tropical birds are based on the collections of natives or travellers having little or no knowledge of ornithology, and are therefore accompanied only by

¹ Notes on a Third Instalment of Japanese Birds in the Science College Museum, Tokoyo, Japan, with Descriptions of New Species. By Leonhard Stejneger. Proc. U. S. Nat. Mus. XVI, 1893, pp. 615-638.

² On a Collection of Birds from Eastern Nicaragua and Rio Frio, Costa Rica, with Notes; and a Description of a Supposed new Trogon. By Charles W. Richmond. Proc. U. S. Nat. Mus., XVI, 1893, pp. 479-532.

technical remarks, that Mr. Richmond's well-annotated paper is doubly welcome. His collections and observations were made between Feb. 1, 1892, and Jan. 19, 1893, all but three months of this time being passed in Nicaragua on the Escondido River, fifty miles from Bluefields.

The results of a study of his specimens, in connection with the collections of the United States National Museum, as set forth in this paper, are as follows: *Trogon chrysomelas*, a form allied to *Trogon atricollis tenellus*, is described as new; *Eleopicus* Bp. is substituted for *Dendrobates Swains.*, 1831, preoccupied by *Dendrobates* Wagler, 1830 (Batrachia). A series of 17 specimens of *Porzana cinereiceps* Lawr. apparently shows that *Porzana leucogaster* Ridgw. is founded on individual variation in that species. No reason is given for relegating the Tinamous to their ancient position between the Quails and Plovers, while *Tanagra palmarum* is presumably a slip for *Tanagra palmarum melanoptera*.

The results of Mr. Richmond's studies of living birds are too numerous to be mentioned within the limits of a brief review. His list includes 242 species of land-birds, and 39 species of water-birds. Concerning the habits of many of these he makes numerous interesting and valuable observations. He considerably extends the range of several species, *e. g.*, *Progne subis hesperia*, *Myrmelastes lawrencii*, and *Panyptila cayennensis*; gives the dates of arrival of many species of North American migrants, and makes some suggestive remarks on the movements of tropical birds. Being present during the breeding season he had an opportunity to study the nesting habits of some species, and he remarks (p. 482) "it is interesting to note that in the tropics many species lay but two eggs," a statement supported by his experience with *Merula grayi*, *Rhamphocelus passerini*, *Oryzoborus furnereus*, *Embernagra striaticeps*, *Glyphorhynchus cuneatus*, and other species.

The biographical notes are evidently based on the careful observations of a skilled observer, and the paper is therefore an important contribution to our limited knowledge of the life-histories of tropical birds.—F. M. C.

Ogilvie-Grant's 'Catalogue of the Game Birds.'¹—In Volume XXII of the British Museum Catalogue of Birds Mr. Ogilvie-Grant gives us a most welcome contribution to the history of the Game Birds of the World. As here treated they constitute four 'orders', namely, (1) the Pterocletes or 'Pigeon-Grouse,' more commonly known as Sand-Grouse, comprising 3 genera and 17 species; (2) the Gallinæ, divided into two suborders, the first, Alectoropodes, including all of the true gallinaceous birds, and the

¹ Catalogue of the Game Birds (Pterocletes, Gallinæ, Opisthocomi, Hemipodii) in the Collection of the British Museum. By W. R. Ogilvie-Grant. London: Printed by order of the Trustees. Sold by Longmans & Co., 39 Paternoster Row; B. Quaritch, 15 Piccadilly; Dulau & Co., 37 Soho Square, W.; Kegan Paul & Co., Paternoster House, Charing Cross Road; and at the British Museum (Natural History), Cromwell Road, S. W. 1893. = Catalogue of the Birds in the British Museum, Volume XXII. 8vo., pp. xvi + 585, pll. viii.

second, *Peristeropodes*, consisting of the *Megapodes*, the *Curassows*, and *Guans*; (3) *Opisthocomi*, with the *Hoatzin* as its sole representative; (4) the *Hemipodii*, composed of the *Bush-Quails* or *Hemipods*. The number of species recognized is 426, besides 25 additional subspecies, the true *Gallinaceous Birds* alone (that is, excluding the 125 *Megapodes*) numbering about 360 species. These last are referred to the two families *Tetraonidæ* and *Phasianidæ*, the former with 11 genera and 26 species, the latter with 59 genera and about 260 species. Says Mr. Grant, "There appears to be no real line of demarcation between the true *Pheasants* (*Phasianidæ*) and the *Partridges* (*Perdiciinæ*), the two groups merging gradually into one another in such forms as *Bambusicola*, *Ptilopachys*, and *Galloperdix*." Resort is made to the shape of the wing, and especially the length of the first primary as compared with the tenth, but even this usually "well-marked character breaks down, and in order to artificially separate these two groups it is necessary to have recourse to secondary or supplementary characters, such as the length of the tail."

The present volume compares favorably with the preceding volumes of the series, and is of course executed after the same general plan, the use of the trinomial form of nomenclature being excluded, and also specific names published prior to Linnaeus's 12th edition. The treatment of various North American forms is amusing rather than irritating, though it seems about time to expect a more intelligent conception of the subject of subspecies and "climatic variation" than is shown in the present volume. In some instances forms that American writers regard as merely subspecies, and sometimes rather poor ones at that, are given the rank of full species, while in other cases they are reduced to synonyms, or allowed to stand as subspecies, as the author's comparatively limited material and lack of information as to the physiographic relations of localities seem to indicate. The author's standpoint and line of reasoning can be made clear to American readers by the following quotation from his footnote (p. 87) under *Bonasa umbellus*: "This species is subject to great climatic variation. . . . The various varieties have been catalogued under no less than four different names, either as species or subspecies, by the latest American authors; but as all these varieties are to be found among a series of specimens from New York alone and are, therefore, not even dependent on locality, we consider it needless to employ more than one name for all, especially as the four recognized forms grade imperceptibly into one another."

We are surprised to find the term *Ortyx* used for our Bob-whites in place of *Colinus*, and without a word of comment, after it has been so clearly shown by Dr. Stejneger (*Auk*, II, Jan. 1885, p. 44) that *Ortyx* was employed by Oken in 1816 for the genus *Turnix*, and also by Illiger, in a slightly different form, in the same sense as early as 1811. *Ortyx* is, therefore, clearly a synonym of *Turnix*, and is untenable as used by Stephens in 1819, leaving *Colinus* as the proper name of the genus for which Mr. Grant still retains the name *Ortyx*.—J. A. A.

Elliot's Monograph of the Pittidæ.—Part II of Mr. Elliot's 'Monograph of the Pittidæ' (see antea, p. 62, for notice of Part I), dated December, 1893, contains illustrations of the following species: *Eucichla ellioti*, *Pitta cærulea* (two plates, giving adult male and female and young), *Anthocincla phayeri*, *Pitta rufiventris*, *P. coronata*, *P. iris*, *P. ussheri*, *P. megarhyncha*, and *P. cucullata*. Very little appears to be known of the life-histories of these beautiful birds. In the few species where the nesting habits are known they appear to construct a domed nest on the ground and lay white eggs, heavily marked and streaked with dark colors.—J. A. A.

Chapman on the Birds of the Island of Trinidad.¹—In this article Mr. Chapman has favored us with another of his excellent papers which so attractively combine entertaining popular description with scientific information. The first five pages are devoted to a general description of the Island of Trinidad and the separate localities where collections were made. A dissertation on the faunal position of Trinidad follows, succeeded by a bibliography of the Trinidad Avifauna. 'Additions to the Trinidad Avifauna' and 'Species described as new and Changes in Nomenclature' are the subjects immediately following, while 'General Remarks on Trinidad Bird-Life' include most interesting matter under the separate headings of 'Number of Species,' 'Migrations,' 'Call-Notes and Song,' 'Nesting,' and 'The Colors of Tropical Birds.' A list of all the species known to the author as having been taken in Trinidad completes the paper. This list, which is freely annotated, mentions 306 species, the last 3 of which, given on Léotaud's authority, Mr. Chapman is unable to identify. The list is rendered more valuable by mention of the local names, both English and French (the latter from Léotaud), and citation of equivalent names in both Léotaud's and Taylor's catalogues.

In the list of species I notice the omission of *Formicarius trinitatis* and *F. albicrissus*, described by me in the Proceedings of the U. S. National Museum, Vol. XIV, No. 871, p. 481. Whether any others have been overlooked I have not had time to ascertain.—R. R.

Publications Received.—Andersen, Knud. *Ligurinus sinicus* i Danmark. (Vidensk. Meddel. Foren. Kbhvn. 1893.)

Büttikofer, J. (1) Description of a New Genus of Crakes. (Notes from the Leyden Mus. XV, pp. 274, 275.) (2) Ornithologisches Sammlungen aus Celebes, Saleyer und Flores. (Zoologische Ergebnisse einer Reise in Niederländisch Ost-Indian, III, pp. 269–306, pll. xvii, xviii.)

Chapman, Frank M. On the Birds of the Island of Trinidad. (Bull. Am. Mus. Nat. Hist. VI, pp. 1–86, Feb., 1894.)

Cherrie, Geo. K. Exploraciones Zoológicas efectuadas en la parte meridional de Costa Rica, por los años de 1891–92. I. Aves. 12mo. pp. 59.

¹ On the Birds of the Island of Trinidad. By Frank M. Chapman. Bull. Am. Mus. Nat. Hist., Vol. VI, Art. I, pp. 1–86. (February 16, 1894.)

Clark, Hubert Lyman. The Pterylography of the Pileated Woodpecker. (Science, No. 565, Dec. 1, 1893.)

Clarke, Wm. Eagle. The Persecution of the Great Skua—*Stercorarius catarrhactes*. (Ann. Scottish Nat. Hist., Jan., 1894.

Elliot, Daniel G. The Life and Services of John James Audubon, an Address delivered before the New York Academy of Sciences, April 26, 1893. (Trans. N. Y. Acad. Sci. XIII, pp. 43-57.)

Lawrence, George N. On the Validity of *Chrysotis canifrons*. (Ibis, Oct., 1893.)

Meyer, A. B. Beschreibung einiger neuen Vögel aus dem Ostindischen Archipel. (Journ. für Orn. 1894, pp. 89-93.)

Ogilvie-Grant, W. R. (1) A Short Review of the Francolins belonging to the Genera *Francolinus* and *Pternistes*. (Ibis, 1892, pp. 32-55, pl. i.) (2) On the Gallinaceous Genera *Bambusicola* and *Arboricola*. (Ibis, 1892, pp. 387-399, pl. ix.) (3) Notes on the Genus *Coturnix*. (Ann. and Mag. Nat. Hist., August, 1892, pp. 166-173.) (4) Notes on Changes of Plumage in the Red Grouse (*Lagopus scoticus*). (Ibid., July, 1893, pp. 61-65.)

Ridgway, Robert. Description of a New *Geothlypis* from Brownsville, Texas. (Proc. U. S. Nat. Mus. XVI, pp. 691, 692.)

Shalow, Herman. Beiträge zur Oologie der recenten Ratiten. (Journ. für Orn. Jan. 1894, pp. 1-28.)

Shufeldt, R. W. (1) On the Taxonomy of the Swifts and Humming-birds: A Rejoinder. (Ibis, Jan., 1894, pp. 32-39.) (2) Night Hawks and Whip-poor-wills. (Pop. Sci. Monthly, Jan., 1894, pp. 308-313.) (3) On the Coloration of the Ruffed Grouse. (Science, No. 573, Jan. 26, 1894, p. 48.) (4) Note on the Shoulder-Girdle of the Man-o'-War Bird. (Ibid., p. 50.)

Actes de la Société scientifique de Chili, III. livr. 1, 2, Oct., 1893.

American Journ. Sci., Jan.-March, 1894.

American Naturalist, Jan.-March, 1894.

Annals of Scottish Natural History, Jan., 1894.

Biological Review of Ontario, I, No. 1, Jan., 1894.

Bulletin British Ornithologist Club, Nos. 13-15, 1894.

Forest and Stream, XLI, Nos. 1-12, 1894.

Journal Cincinnati Soc. Nat. Hist. XVI, No. 4, Jan. 1894.

Naturalist, Month. Journ. Nat. Hist. for north of England, Nos. 222-224, Jan.-March, 1894.

Nidologist, I, Nos. 5, 6, Jan., Feb., 1894.

Ornithologische Jahrbuch, IV, Heft. 6 and V, Heft. 1.

Ornithologische Monatsberichte, II, Nos. 1-3, Jan.-March, 1894.

Ornithologist and Oölogist, XVIII, Nos. 8-10, Aug.-Oct., 1893.

Ottawa Naturalist, VII, Nos. 10-12, Jan.-March, 1894.

Transactions Wisconsin Acad. Sci., Arts and Letters, IX. Pt. 2, 1893.

Zoölogist, Jan.-March, 1894.

GENERAL NOTES.

An Abundance of Murres in the Environs of Quebec.—Since the 15th of November last, numerous flocks of Murres¹ have been seen flying over the river before Quebec; hundreds have been shot by sportsmen and some have even been killed with sticks near the wharves. The cold in December has been from 15° to 25° Reaumur, but it did not seem to inconvenience them. Several, however, that had left the water to rest on floating ice found themselves unable to remove on account of their wet feet freezing to it; two live specimens thus captured have been brought to me. The presence of these birds is a novelty here, as they are never met with in the environs of the city. Several have even strayed away into the mountains about ten miles from the river; they were exhausted and starving. After the 20th of December their numbers considerably decreased till the 8th of January, when the last were seen. Their presence is probably due to hurricanes in the Gulf of St. Lawrence driving them towards the southwest.—C. E. DIONNE, *Quebec, Can.*

The Double-crested Cormorant.—I have read with interest an article on the 'Habits of the Double-crested Cormorant' in 'The Auk' for January, 1894. For the last ten years I have spent one day in the last part of September on the Graves at the entrance to Boston Harbor, the resort for the Cormorants of the north shore. I try to get there on a rising tide, believing that the Cormorants which I drive away fly to an outlying ledge of the Brewsters and there sit on the seaweed until driven off by the tide, when they fly back to the high rocks of the Graves. I generally take two decoys which I put on the top of the rocks and hide myself in a cleft. I generally shoot four or five and try and justify my doing so by giving them to an old inhabitant of Swampscott, in his day a sportsman, who puts them through that process of dissolution which is said to make Coot palatable (but which doesn't), and eats them. I have often seen the balls of fish bones lying on the rocks described by Mr. Mackay, rejections after digestion by the Cormorant, and have, as he says, invariably found the throat of the bird full of fish, generally the common sea perch.—CHARLES P. CURTIS, JR., *Boston, Mass.*

Correction.—In my article 'Habits of the Double-crested Cormorant in Rhode Island' (Auk, Jan. 1894, p. 20) "*Cancer irroratus* Say = *Panopeus sayi* Smith" should read "*Cancer irroratus* Say and *Panopeus sayi* Smith."—GEO. M. MACKAY, *Nantucket, Mass.*

In Re Dutcher on the Labrador Duck.—Fearing that my statement in the January 'Auk,' p. 11, lines 1 and 2,—“D. M. Cole and his associate, Mr. Cary, saw a female duck with a brood of young which he was sure was this species,”—may give a wrong impression, notwithstanding the conclusion stated at the close of the paragraph, I now state that the bird

¹ [A specimen sent to Dr. Jonathan Dwight, Jr., proved to be *Uria lomvia*.—EDD.]

seen was *not* a Labrador Duck. Mr. Cole has recently visited Cambridge, and through the courtesy of Mr. William Brewster was shown his specimens of the Labrador as well as other specimens of Ducks, and after a careful study of them, aided by Mr. Brewster, concludes that the bird he saw on the Grand River was a female of the genus *Glaucionetta*,—Golden-eye.—WILLIAM DUTCHER, *New York City*.

The Labrador Duck.—An Overlooked Specimen and Record.—Mr. Ernest D. Wintle, of Montreal, Canada, lately called my attention to a heretofore overlooked record and specimen of the Labrador Duck. The following is an exact copy of the record as published in 'The Canadian Naturalist and Geologist,' Vol. VII, December, 1862, No. 6, pp. 426-427, by Archibald Hall, M. D., L. R. C. S. E, in his series of papers entitled 'On the Mammals and Birds of the District of Montreal.'

"*A. Labradorica*. Labrador Duck.

"*Fuligula Labradorica*. Anderson!

"*Camptolemus Labradorus*. Gmel.! Gray! Baird!

"v. s. p. Cire flesh colour; remainder of bill blackish horn colour; tarsi and irides yellow.

"Dorsal aspect. With the exception of a streak of black stretching from the base of the bill to the occiput, and a very light brown streaky stain stretching from the cire to below the ear, all the rest of the head, with the secondaries, pure white; remainder of the back black; tail, which is rather acuminate rounded, blackish brown; the distal third of the outer edge of the outer scapulars coloured with black, and the whole of the inner vanes of the inner half dusky, terminating in blackish, giving to the under surface of the wing a dusky appearance; the primaries are all dusky black; the feathers on the cheek have a bristly feel; in other parts of the head and neck the feathers have a velvety feel, a good deal resembling that of the Great Northern Diver.

"Ventral aspect. A belt of white across the breast until it touches the wing, and separated from the white of the head by a ring of black about half an inch broad; remainder of breast black, quickly changing to blackish, which itself changes to brown on the abdomen and under wing coverts; the flanks, like the lower part of the breast, are shining black.

"Length, from tip of bill to apex of tail, 20½ inches; alar expanse, 27½ inches; the two first primaries longest and subequal.

"A specimen of this beautiful duck, the first which I have seen, was shot in the bay of Laprairie this spring (1862) by a *habitant*, and was purchased by Mr. Thompson of this city, who has kindly placed it at my disposal for examination. I believe it to be one of the rarest of our visitants of this species, and to demonstrate that an acquaintance with our Fauna must be a work of many years."

This specimen is the forty-second so far known, of which thirty are in North America. It gives me pleasure to announce that by purchase I have added this specimen to my collection.—WILLIAM DUTCHER, *New York City*.

The Yellow-crowned Night Heron in Rhode Island.—In August, 1892, it was my good fortune to procure a Yellow-crowned Night Heron (*Nycticorax violaceus*), at Newport, Rhode Island. The bird was a young female, and was taken in a small grove of pine trees. When first perceived it was standing on the ground apparently unconcerned as to its surroundings. Upon my approach the bird did not appear intimidated but began to walk along slowly under the trees. It was very easily shot. This is the first one of this species that I have seen in Newport, and I think it rather a rare occurrence.—J. LIVERMORE, *New York City*.

High Plumage in the Ptarmigan.—Early in January, I received a box of Grouse in the flesh from Mr. Thomas J. Egan of Halifax, N. S., among which were a pair of Ptarmigan (*Lagopus lagopus*) from Newfoundland. One of these, a male, had the shafts of the secondaries black and was therefore probably *L. alleni*, but the most striking thing about the plumage was the very evident tinge of rose-color, which was deepest on the rump and on the sides under the wings. The bird was examined in daylight and there was no mistaking its very high coloration. It was equally clear that the color was not adventitious or due to any external influence. The shading was so delicate that I felt sure it would fade from a skin and so the specimen was not preserved. My attention has again been called to the matter, however, by another male *L. lagopus*, which I have recently received from Mr. William Clark of Winnipeg, to whom I am indebted for other birds also. This specimen was larger than the first and the rosy tint was more intense being especially clear on the sides, making the bird by far the handsomest one of its species which I have ever seen. Possibly this high plumage may have been recorded by others but it is not mentioned by the authorities to whom I have access.—HUBERT LYMAN CLARK, *Pittsburgh, Pa.*

Capture of *Ceryle torquata* (Linn.) at Laredo, Texas. A Species New to the United States.—Mr. George B. Benners of Philadelphia recently brought to me for identification a Kingfisher which he had secured near Laredo, Texas, and which proved to be an adult female of the Ringed Kingfisher, *Ceryle torquata*, which, so far as I am aware, has not been previously recorded farther north than southern Mexico.

Mr. Benners states that he shot the bird on June 2, 1888, about one mile below Laredo on the United States side of the Rio Grande. It was sitting on some old roots which had been washed up into a heap by the current of the river, and was shot immediately, so that he did not see it fly or hear its call. Mr. Benners further states that he never saw one of these birds in the vicinity either before or since. Upon the strength of the evidence just given this species seems entitled to a place in the fauna of the United States, along with the several other tropical birds which occasionally reach the Rio Grande valley.

Mr. Benners has generously presented the specimen to the Academy of Natural Sciences of Philadelphia (No. 30,517, Coll. A. N. S. Phila.).—WITMER STONE, *Academy of Natural Sciences, Philadelphia, Pa.*

Dryobates scalaris lucasanus in San Diego County, California.—A Sapsucker collected by Mr. W. W. Price on April 29, 1889, at White Water, San Diego County, Cal., is a typical example of *Dryobates scalaris lucasanus*. Mr. Price writes me that the specimen (♂ ad., No. 5,324, collection of G. S. Miller, Jr.) was shot from a telegraph pole "about three miles west of the station of White Water." Woodpeckers, apparently of the same kind, were seen on several other occasions on the telegraph poles along the line of the S. P. R. R. near White Water, but they were very shy and no more could be killed. The birds were nesting in the telegraph poles, there being no other wood in the region.

Mr. A. W. Anthony found this bird among the San Pedro Martir Mountains, Lower California, in April, 1893 (*Zoe*, IV, October, 1893, p. 236). The present record extends the range of the form considerably to the northward.—GERRIT S. MILLER, JR., *Cambridge, Mass.*

Notes on the Capture of the Gray Kingbird (*Tyrannus dominicensis*) near Charleston, South Carolina.—In the early part of May, 1885, Mr. Brewster and myself saw a pair of Gray Kingbirds at Fort Moultrie, Sullivan's Island, S. C. I determined to secure these birds with their nest and eggs, and after several visits to the Island I located their range, and on May 28, I found their nest which contained one egg and shot the female bird. The nest was built in a silver-leaf poplar, in a gentleman's yard, only a few feet from his dwelling house. The nest, as I remember it, was very frail. Since that date of capture I have failed to notice the presence of this species on any of the coast islands of South Carolina, until this year, 1893.

On May 30 of this year, I determined to search Sullivan's Island carefully for this rare visitor, and accordingly I arrived there early in the morning of the above date. After walking the entire length of the Island near the front beach, and having failed to discover this species, I leisurely searched the back beach. At twelve o'clock—mid-day—a bird I saw flying about three hundred yards away I took to be this species. I followed the direction of its flight until it was lost to view—over half a mile away. I at once hastened to the spot, and to my delight found a veritable Gray Kingbird perched on the top of a flag pole about fifty feet high in a private yard. The law on the Island prohibits shooting, under penalty of \$10.00 fine. My only chance was for the bird to light on the Government property—Fort Moultrie grounds—six yards away, where I could not be molested. I did not have long to wait before the male which was perched on the flag pole flew into the Government lands where I at once shot it. Upon my shooting the bird its mate flew directly over me, and I soon had it stored carefully away in my collecting basket. The nest which was found in the private yard, close to the flag pole, was built in the top of a small live oak tree about twenty feet high. It is a very frail structure, and is composed of sticks, jasmine vines, and lined apparently with oleander rootlets. One article in its composition which

is quite curious is a long piece of fishing cord. The nest contained two eggs, and upon dissecting the female I found one more egg which would have been laid the following day. It will be seen that all the specimens of the Gray Kingbird which have been actually taken in South Carolina were from this famous Island—a favorite summer resort for the people of Charleston.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

Picicorvus an Untenable Genus.—In 'History of North American Birds,' Vol. II, p. 255, it is stated that the so-called genus *Picicorvus* "is so similar to *Nucifraga* as to be hardly separable; the principal difference being in the slender and more decurved and attenuated bill, with a slightly concave, instead of convex, culmen, and plain instead of spotted plumage." At the time, only one of the Old World species of *Nucifraga*, *N. caryocatactes*, the type of the genus, was available for comparison, and such was still the case when the A. O. U. Check-List was prepared; but more recently other species have been secured by the National Museum, and these, notably *N. multiguttata* Gould, from the Himalayas, show that the supposed distinction as to shape of the bill exists only as a specific character, *N. multipunctata* having the bill quite as slender as that of "*Picicorvus*" *columbianus*. Furthermore, the American species frequently shows indications of white apical spots to feathers of the breast, and still better developed white spots at tips of primaries. I can therefore see no good reason for continuing the recognition of *Picicorvus* as a genus, and would follow Audubon in calling Clarke's Nutcracker *Nucifraga columbiana*.—ROBERT RIDGWAY, *U. S. National Museum, Washington, D. C.*

Notes on the Distribution of the Bobolink in South Carolina.—Mr. Loomis in his article entitled 'A Further Review of the Avian Fauna of Chester County, South Carolina,' in 'The Auk' for January, 1894, p. 27, makes this statement: "This is exemplified in the Bobolink, which is abundant along the South Carolina coast in autumn, but only so in the interior of the State in spring." This latter clause is entirely incorrect. The Bobolink is very abundant along the coast from April 28 to May 26, and some remain until June 5. They are known as 'May Birds,' and play havoc with the rice which has just sprouted by pulling it up. The rice fields have to be watched from morning till night by men called 'bird minders' who are shooting the entire day. A great many planters now plant the 'late' rice in June to avoid the birds. The May Birds do not confine themselves entirely to the rice, but also resort to the oat fields which at that season are 'in the milk,' and they become excessively fat. I have killed frequently more than forty Bobolinks at a shot from the oat fields in May. The Bobolink is also very partial to the enormous potato fields which are in full bloom the last of May and nearly ready to be dug. I have never been able to find what they feed on in the potato fields but it must be some bug peculiar to the potato. It is safe to say that millions of Bobolinks depredate upon the rice planters every May.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

The Change from Winter to Spring Plumage in the Male Bobolink (*Dolichonyx oryzivorus*).—I have been much interested in Mr. Chapman's articles on the "spring moult" of the Bobolink (Auk, VII, 1893, p. 120; and X, 1893, p. 311), but after reading them I could not help asking myself two questions: Does the adult male Bobolink always have a spring moult except when caged? If so, how can we explain the fact that *in captivity the same change in plumage may take place absolutely without any sign of moulting?*

As I must leave these questions unanswered, let me add a few words about a pet Bobolink I once owned.

The bird was in the usual black breeding plumage when I first had him, but *during the fall there was a complete moult*, and he became the well known Reed-bird of the South. Always having had the impression that the Bobolink must also moult when changing from the winter to the summer dress, I was very much surprised in this case to find no feathers in the cage at any time during the spring, though I looked carefully for them myself day after day. The change in color, however, went steadily on, beginning with the appearance of a black feather here and there, until, having passed through a kind of intermediate 'pie-bald' stage, my bird looked once more as he did when I first had him the previous summer; except that the black was not quite as deep, though very nearly so, nor was the yellowish white so clear as at first. All at once, before the change was complete, he burst into full song, and kept it up until fall, when he moulted, and was again the yellowish brown bird of the preceding autumn.

There was no doubt about the autumnal change being a *true moult* during this or the preceding fall, as the feathers about the cage and the 'pin-feathers' on the bird fully proved, and the absence of any true moult in spring was shown with equal certainty by the absence of these same proofs.

In the autumn I gave my Bobolink to a friend, who only succeeded in keeping him a few weeks; so this was the last of one of the happiest birds it was ever my good fortune to possess.—JAMES SKILLEN, *Harvard Medical School, Boston, Mass.*

Calcarius lapponicus in Winter at Palmer, Marquette Co., Mich.—On January 22, 1894, I obtained a male Lapland Longspur. When secured it was feeding on grass seed and oats left by some horses, which had been fed at the south and protected side of a building at the mine. The day was cold and stormy, as had been the day previous. The bird had doubtless been lured north by the preceding week of warm weather, January 14-21. It was alone, no others being seen at the time; nor have I the knowledge of another authentic record of its occurrence in Upper Peninsula, although I have made many inquiries.—OSCAR B. WARREN, *Palmer, Mich.*

Missouri Titlark in Louisiana.—A number of Missouri Titlarks (*Anthus spragueii*) were shot on January 20, 1894, at Avery's Island, Iberia Parish, Louisiana. One of the specimens is in my possession. I hardly think the bird has yet been recorded from Eastern Louisiana. Iberia Parish is at the eastern edge of the Louisiana prairies.—GUSTAVE KOHN, *New Orleans, La.*

The Western Winter Wren in Southern California.—On Wilson's Peak, November 24, 1893, I shot a Western Winter Wren (*Troglodytes hiemalis pacificus*). Its sharp *chip*, coming from a thick growth of bushes at the bottom of a small ravine, revealed its presence. On November 17, there was a heavy gale from the northward, and several inches of snow fell on the peak. November 23 some large patches of snow still lay on the summit, and also below it, on the northern side, some 450 feet or so, where the solitary Wren was found. In Belding's 'Land Birds of the Pacific District' this species is recorded as having been taken both at Fort Tejon, 65 miles northwest of here, and at Saticoy, near Ventura. No other Wrens were noted on the peak during our short stay, but at the base of the range a single *Thryothorus*, probably Vigors's Wren, was seen in the evening dusting itself in the sand under a species of white sage.—R. H. LAWRENCE, *Monrovia, Cal.*

Notes on Some Connecticut Birds.—*Melospiza lincolni*.—This shy Sparrow was not uncommon here from September 21 to October 3, 1893. Eight of these birds were secured by Mr. W. E. Treat.

Sylvania pusilla.—The Wilson's Warbler is so seldom seen during the fall migration that the capture of two specimens here September 27, 1893, by Mr. Treat, may be worthy of record.

Vireo philadelphicus.—A male of this rare species was taken here September 21, 1893, and is in my cabinet. It was killed among some large willows on an island in the Connecticut River.—JNO. H. SAGE, *Portland, Conn.*

Rare Visitants to the Connecticut River Valley in 1893.—*Rynchops nigra*.—During the prevalence of an unusually severe gale the latter part of August, a Black Skimmer was found in West Springfield, Mass., in an exhausted condition, and taken by hand.

Dendroica palmarum.—On the 4th of September, in Windsor, Conn., Leon Holcomb of Springfield captured a young Palm Warbler. He found it feeding on the ground in an old field, in company with American Goldfinches.

Crymophilus fulicarius.—Near Chicopee, Mass., on the 30th of September, two young Red Phalaropes were captured from a flock of about a dozen.—ROBERT O. MORRIS, *Springfield, Mass.*

Some Summer Birds of the Pocono Mountains, Pennsylvania.—During the past summer I spent a few days—July 2-4, 1893—collecting in the immediate vicinity of Mt. Pocono, Monroe Co., Pennsylvania, and observed the following 'northern' species, all of which were undoubtedly breeding at that locality. The notes which accompany each species are based either upon my own experience or upon that of my friend, Mr. William A. Shryock, who accompanied me and made a more extended stay in the vicinity.

Carpodacus purpureus.—Several seen.

Dendroica pensylvanica.—Common in the clearings and second growth. A young bird in the first plumage was secured.

Dendroica cærulescens.—Tolerably common in oak and hemlock woods bordering a deep ravine.

Sylvania canadensis.—Common in the rhododendron thickets. Mr. Shryock secured a nest and set of eggs.

Turdus aonalaschkæ pallasii.—One specimen secured. The elevation and location of the Pocono plateau is such as to warrant a fauna quite as boreal as that found at Harveys Lake and North Mt.,¹ but the virgin forest has been entirely cleared away in the vicinity of Mt. Pocono and with it have disappeared the northern species of birds, a few only remaining in the deep ravines where they still find a congenial home in the rhododendron thickets, and the scant growth of hemlocks which escaped the lumberman's axe.

That the fauna of the Poconos was once quite as rich in boreal forms as the northern Alleghanies is shown by the fact that a few miles beyond Tolyhanna Mills (northwest of Mt. Pocono), where there still remains a portion of the virgin hemlock forest, my friend, Mr. Stewardson Brown, found (July 24, 1893) the Junco and Winter Wren in addition to the species above mentioned. Mr. Brown also observed a large flock of Red Crossbills at Tolyhanna, and in a clearing near the hemlock tract, he is positive he heard several White-throated Sparrows singing. As Mr. Brown is thoroughly acquainted with this bird he could hardly have been mistaken, but it is unfortunate that he was unable to secure a specimen, as this is, so far as I am aware, the first record of the occurrence of this species in Pennsylvania in the breeding season.—WITMER STONE, *Academy of Natural Sciences, Philadelphia, Pa.*

Ten New Birds for Colorado.—During the past few weeks I have had the pleasure of examining several small collections of stuffed birds that had been taken in Colorado and find among them several species that have never been formally ascribed to the State.

Larus philadelphia. BONAPARTE'S GULL.—One at Denver and one at Colorado Springs. There is a slight doubt about the one at Denver having been captured in Colorado.

¹ See Stone, Proc. Acad. Nat. Sci. Phila., 1891, p. 431, and Dwight, Auk, 1892, p. 129.

Sterna antillarum. LEAST TERN.—One at Colorado Springs; reported as having been taken near Fort Collins.

Mergus serrator. RED-BREASTED MERGANSER.—Has been but once before reported from Colorado, namely, by Lieut. P. M. Thorne from Fort Lyon. It has, however, been also taken at Fort Collins, and December 1, 1893, I obtained it on a small lake near Berthoud.

Oidemia deglandi. WHITE-WINGED SCOTER.—It seems queer that this ocean Duck should occur in this arid region, but not only is there one stuffed at Fort Collins, but some four or five other occurrences have come to my knowledge.

Botaurus exilis. LEAST BITTERN.—A single specimen known, taken near Colorado Springs.

Ardea candidissima. SNOWY HERON.—A white Heron has been twice attributed to Colorado, but both times with a question as to the species really seen. It is probable that this is the kind observed, for several have been taken in the State. I have seen two specimens, one taken at Loveland and the other at Fort Collins.

Nycticorax nycticorax nævius. BLACK-CROWNED NIGHT HERON.—A specimen at Colorado Springs adds a second to the single occurrence already reported by Mr. H. G. Smith at Denver.

Grus canadensis. LITTLE BROWN CRANE.—In addition to the one reported by Lieut. Thorne at Fort Lyon, a specimen has been taken near Fort Collins.

Calidris arenaria. SANDERLING.—One taken near Fort Collins; one other specimen has also been reported.

Charadrius squatarola. BLACK-BELLIED PLOVER.—The only printed record of this bird to date is that of Mr. Smith from Denver. There is a stuffed specimen at Fort Collins, and I shot one out of a flock of four at the same place October 28, 1893.

Nyctala acadica. SAW-WHET OWL.—One of these birds was found dead near my house, January 12, 1894. There is also a mounted specimen at the College here, and it has been reported to me from other places in the State. I have also two more records of the Short-eared Owl, which has been but twice before reported from the State.

Nyctea nyctea. SNOWY OWL.—It seems strange that no record of this Owl should have crept into print, for it is a not uncommon winter visitant. Nearly a dozen cases of its occurrence have been reported to me and I have seen one mounted bird taken near Fort Collins.

Coccyzus erythrophthalmus. BLACK-BILLED CUCKOO.—Has probably been taken in the State several times, but I can find no printed record of it. There is a mounted specimen at Fort Collins.

Zonotrichia querula. HARRIS'S SPARROW.—One at Colorado Springs.

Dendroica caerulescens. BLACK-THROATED BLUE WARBLER.—One at Colorado Springs.—W. W. COOKE, *Fort Collins, Colo.*

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

Frank Bolles.

TO THE EDITORS OF 'THE AUK':—

Dear Sirs:—At a regular meeting of the Nuttall Ornithological Club held February 19, 1894, the following Memorial of Mr. Frank Bolles, an Associate Member of the A. O. U., who died January 10, 1894, was adopted by the Club for entrance in the Records and the secretary was instructed to communicate it to 'The Auk' for publication.

This Memorial was written by Mr. Hoffmann for the special committee appointed to prepare it, consisting of Messrs. Brewster, Batchelder, Carruth and Hoffman.

Yours very truly,

FRANCIS BEACH WHITE,

Secretary.

Nuttall Ornithological Club, Cambridge, Mass., Feb. 21, 1894.

Mr. Bolles's connection with the Nuttall Club, which has been so sadly and unexpectedly severed, dated from December, 1887, when he was elected to membership. Throughout the next six years his interest in the success of the Club was keen, and his attendance, when the nature of his work is considered, extremely constant. He used the opportunity which his connection with Harvard University afforded him to add to the membership of the Club, and his contributions in the shape of papers were of unfailing interest.

Through the spring of 1892 he served the Club faithfully in the capacity of secretary. His presence at any meeting was a stimulus to both readers and listeners and a guarantee of fruitful discussion of the questions in hand.

Of the papers which Mr. Bolles has read at various meetings of the Club, some have found their way into his books, while others have appeared in various periodicals. His published works include beside his two books—'The Land of the Lingering Snow' and 'At the North of Bearcamp Water'—and some scattered notes, an article in the 'New England Magazine' (Vol. VII, p. 93) called 'Bird Traits'; one in the 'Popular Science Monthly' (Vol. XLI, p. 313) called 'Ways of the Owl'; and three in 'The Auk,' entitled 'Barred Owls in Captivity' (Vol. VII, p. 101), 'Yellow-bellied Woodpeckers and their Uninvited Guests' (Vol. VIII, p. 256) and 'Young Sapsuckers in Captivity' (Vol. IX, p. 109).

His services to Ornithology were of two distinct kinds; several of his articles dealing with special subjects, took rank as soon as they appeared, as contributions of permanent scientific value. This is especially true of his well-known study of the Sapsuckers, an examination of which will reveal the secret of much of his success in field-work. It gives abundant evidence of the most patient and intelligent observation. When Mr. Bolles undertook the study of any particular problem, he concentrated his attention upon the subject with a remarkable conscientiousness and closeness. Nothing was allowed to distract him from the work in hand; nothing escaped him which might throw light on it. He displayed, moreover, a fertility and an ingenuity in experiment which enabled him to test in a remarkable way the accuracy of his conclusions.

Besides these special contributions to scientific knowledge, Mr. Bolles in his popular writings presented the subject of Ornithology in so attractive a light, and to so large an audience, that it is doubtful if any other recent writer has awakened a more widespread interest in the subject.

The story of his entrance into the field of literature is an interesting one. In the winter of 1889, before the 'Boston Post' had ceased to represent the best traditions of Boston journalism, its readers were attracted by a series of weekly letters, signed O. W. L., which described, in a vivid and attractive fashion, the changes of a New England season from mid-winter to early spring. The letters showed the fields and hills of the vicinity in an aspect totally unfamiliar to many and lent to the seemingly barren wastes of snow, the animation of natural life, and the warmth and beauty of sunset and storm. They were often written at the close of a long outing, rapidly and accurately setting forth in the incisive language which Mr. Bolles always employed, the incidents of the day. At the fortunate suggestion of Mr. Lowell the letters were put into a permanent form and will serve to perpetuate to an ever-increasing number of readers the memory of their author.

It will be evident to the hastiest reader of Mr. Bolles's books, as it was to those who knew him, that he loved the outdoor world with the intensity and entire sincerity of his whole nature. Especially the wilder aspects of Nature appealed to him. Winter, the sea, the mountains, attracted him, and found in him a sympathetic interpreter. In his unaffected delight in being out of doors, and in his enthusiasm in recording the simplest facts that came within his observation lie much of the charm of his work. There is, besides, the virility and freshness of his style, and his splendid power of description.

Of Mr. Bolles as a man and as a friend this is not the place to speak at length. To those who knew him, his presence is still so vivid, and the feeling of his loss so keen, that a mere word will serve to recall him. His whole-heartedness characterized his relations with his fellows, as it entered into everything he undertook. All who knew him feel a sense of his loss which reveals to them how large a part he filled in their lives.

Random Notes on some of the Parasites of Birds.

TO THE EDITORS OF 'THE AUK':—

Dear Sirs:—Five or six years ago when collecting in New Mexico, I shot one afternoon some eighteen or twenty White-throated Swifts (*Aëronantes melanoleucus*), which I carried home as usual in newspaper cones in my pockets. On my way back I discovered an enormous parasite crawling along the edge of the collar of my shooting-jacket. At first it struck me that it must be some large 'pine-louse' which had fallen on me while passing through the timber earlier in the day. But as I walked along the idea came into my mind that perhaps the Swifts had something to do with it, and I at once seated myself on the prairie and took out all my specimens. Some half a dozen of them had been carefully examined before anything turned up to confirm my suspicions, when, sure enough, I came to one which had crawling among its feathers an insect apparently the very counterpart of the one I had captured on my coat. Both of these were consigned to a small bottle in my collecting-case, but a thorough going over of all the rest of my birds did not reward me with another of those interesting parasites. A few days later I sent these specimens to the distinguished entomologist Mr. Charles O. Waterhouse, of the British Museum, and he found them worthy of a notice and a figure of the insect in the 'Proceedings' of the Zoölogical Society of London for 1887 (pp. 163, 164). Mr. Waterhouse found this parasitic dipterous insect to belong to the family Hippoboscidae, and to be new to science. He called it *Anaëra fimbriata*, and remarked: "It is closely allied to *Anaëra pallida*, a European dipterous parasite found on *Cypselus apus*. It is, however, much larger, and is at once distinguished by the almost total absence of wings—a character which might, by some, be considered of generic importance. Having only two examples, which appear to be females, I prefer for the present to place the species in the genus *Anaëra*."

My attention had never been especially drawn to this interesting subject before, nor have I since had much opportunity to look very closely into it. But it has often occurred to me, that if we were familiar with a great many of the parasites of our birds, they might in some instances prove to be of service in the classification of the birds themselves. Now in the case of those Swifts,—there we find two species, belonging, one each, to widely-separated countries. The extraordinarily large and unusual parasites found on them are also of the same genus, yet of very distinct species. It would be interesting now to know whether this parasite—*Anaëra fimbriata*—is found upon any of our other species of Swifts, or whether they have different kinds infesting them. None of my ornithological friends seem to have given much attention to this subject, and, beyond the writings of Leach, Nitzsch, and Burmeister, I am not especially familiar with the literature of the subject. Sly peeps into Dame Nature's secrets